

CAI
IB 46

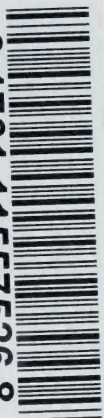
-15B26

Canada Topographical Survey
" [Bulletin, no. 26]

Government
Publication

DOMINION OF CANADA
DEPARTMENT OF THE INTERIOR
TOPOGRAPHICAL SURVEYS BRANCH

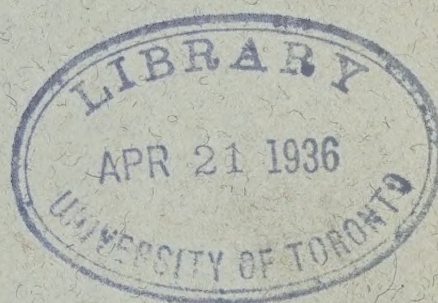
3 1761 11557526 8



DESCRIPTION OF SURVEYED LANDS

IN THE

RAILWAY BELT OF BRITISH COLUMBIA



PART No. 2—CENTRAL DIVISION.

Printed by authority of the Minister of the Interior
MARCH, 1915

CAI
IB 46
-15B26

DOMINION OF CANADA
DEPARTMENT OF THE INTERIOR
TOPOGRAPHICAL SURVEYS BRANCH

DESCRIPTION OF SURVEYED LANDS

IN THE

RAILWAY BELT OF BRITISH
COLUMBIA

PART No 2.—CENTRAL DIVISION

Printed by authority of the Minister of the Interior
MARCH, 1915

70999—1

PREFATORY NOTE.

The information contained in this pamphlet consists of reports and field notes of Dominion Land Surveyors who were sent out by the Interior Department.

The townships are placed in order of ranges, the number of the ranges and townships in heavy figures on the left side.

* * *


The report is published in three parts. The territory comprised in Part No. 1 is the easterly section of the Railway Belt, including the Upper Columbia, Lower Columbia and Shuswap Lake divisions, extending from the boundary of the province of Alberta to the western boundary of range 15, west 6th. Part No. 2 comprises the Central portion. Part No. 3 comprises the Coast division.

* * *

The first portion of the pamphlet consists of each surveyor's report on the whole season's work, and general information and description of the district examined. In the last portion the information is given by section, township and range in numerical order, commencing at range 16, west of the 6th meridian, and concluding at range 28, west of the 6th meridian. In this way individual townships to which it is desired to refer can be readily located in the second portion of the pamphlet.

E. DEVILLE,
Surveyor General.

OTTAWA, 1915.



Digitized by the Internet Archive
in 2022 with funding from
University of Toronto

<https://archive.org/details/31761115575268>

EXPLANATION AS TO THE RAILWAY BELT.

The Railway Belt is a strip of land forty miles in width following the main line of the Canadian Pacific railway in British Columbia, being twenty miles on each side of the railway from the boundary of the province of Alberta on the east to a line drawn approximately north and south from the city of New Westminster at the Pacific coast. The Railway Belt contains an area of 17,150 square miles, or 10,976,000 acres. It was transferred to the Dominion by the province of British Columbia by provincial statute of 19th December, 1883. (Chapter 14, 47 Victoria.)

This tract of land is a mountainous region and divides itself into five main divisions dominated by topographical conditions, comprising from east to west: (1st) the Upper Columbia division, being the valley of the Columbia river north and south of Golden; (2nd) the Lower Columbia division, being the valley of the Columbia river north and south of Revelstoke; (3rd) the Shuswap Lake division; (4th) the Kamloops division or Dry Belt; and (5th) the Coast or New Westminster division.

Considerable diversity as to climatic, timber and soil conditions, and as to altitude, exists in the different divisions of the Railway Belt; for instance, the rainfall in the Coast division is very heavy, fostering the growth of giant timber. In the next division to the east, the Kamloops division, there is a deficiency of rainfall, and for the most part cultivation without irrigation is impracticable, although within recent years considerable progress has been made by dry-farming methods; the timber conditions are very light, and large tracts of country are utilized for grazing purposes; this division is usually known as the Dry Belt. In the divisions to the east of the Dry Belt rainfall is usually normal, and the entire areas are well forested.

The lands suitable for settlement consist for the most part of the bottom and bench lands along the innumerable valley systems of lakes, rivers and creeks, usually of a high degree of productivity. A very large proportion of the total area is of great altitude, rough or unproductive in character, or suitable only for forest growth.

During the past few years survey parties have been at work in various divisions of the Railway Belt for the purpose of extending surveys and classifying lands which might be deemed suitable for settlement. These reports during the progress of the work were placed in the hands of the Dominion Lands Agents and are now compiled in printed form as far as survey work has proceeded.

Lands in the Railway Belt are administered by the Dominion Government. Water rights in the Railway Belt are under the provincial administration at Victoria, B.C. Considerable areas in the Railway Belt are set apart as Forest reserves and Dominion parks. Settlers or others desiring information should apply to the Dominion Land and Timber Agents at New Westminster, Kamloops and Revelstoke, B.C.

INDEX TO SURVEYORS' REPORTS CONTAINED IN THIS PAMPHLET.

	PAGE
Back Valley, C. H. Taggart, D.L.S., 1912.....	36
Barnes Creek, A. V. Chase, D.L.S., 1910.....	29
Bonaparte River, A. V. Chase, D.L.S., 1911.....	31
Botanie Creek Valley, A. V. Chase, D.L.S., 1912.....	42
Cache Creek, A. V. Chase, D.L.S., 1911.....	31
Cahilty Creek, C. H. Taggart, D.L.S., 1912.....	36
Campbell Creek Valley, A. J. Campbell, D.L.S., 1909.....	11
Cicero Creek Valley, C. H. Taggart, D.L.S., 1912.....	36
Copper Creek Valley, Jos. E. Ross, D.L.S., 1910.....	23
Criss Creek Valley, Jos. E. Ross, D.L.S., 1910.....	23
" " A. V. Chase, D.L.S., 1911.....	31
Deadman River Valley, R. D. McCaw, D.L.S., 1909.....	13
" " " Jos. E. Ross, D.L.S., 1910.....	23
" " " A. V. Chase, D.L.S., 1911.....	31
Eight Mile Creek, A. V. Chase, D.L.S., 1911.....	31
Fadear Creek Valley, C. H. Taggart, D.L.S., 1912.....	36
Guichon Creek Valley, R. D. McCaw, D.L.S., 1910.....	27
" " " A. V. Chase, D.L.S., 1910.....	29
Hat Creek Valley, A. V. Chase, D.L.S., 1911.....	31
Hat Creek Valley and its tributaries, A. V. Chase, D.L.S., 1912.....	42
Heffley Creek, C. H. Taggart, D.L.S., 1912.....	36
Highland Valley, R. D. McCaw, D.L.S., 1910.....	27
" " A. V. Chase, D.L.S., 1910.....	29
Jamieson Creek, Jos. E. Ross, D.L.S., 1910.....	23
Kamloops District, A. G. Stacey, D.L.S., 1907.....	17
" " Jos. E. Ross, D.L.S., 1910.....	23
" " C. H. Taggart, D.L.S., 1911.....	34
Kamloops Indian Reserve, C. H. Taggart, D.L.S., 1912.....	36
South of Kamloops, Jos. E. Ross, D.L.S., 1906.....	15
Long Lake, Jos. E. Ross, D.L.S., 1906.....	15
Long Lake Forest Reserve, R. D. McCaw, D.L.S., 1910.....	27
Louis Creek Valley, R. D. McCaw, D.L.S., 1909.....	13
" " " C. H. Taggart, D.L.S., 1912.....	36
Martin Mt. Forest Reserve, A. V. Chase, D.L.S., 1912.....	29
Meadow Creek, R. D. McCaw, D.L.S., 1910.....	27
Murray Creek Valley, A. V. Chase, D.L.S., 1912.....	42
Nicola River, J. A. Calder, D.L.S., 1912.....	40
" " A. V. Chase, D.L.S., 1912.....	42
Niskonlith Forest Reserve, R. D. McCaw, D.L.S., 1910.....	27
Pass Creek Valley, A. V. Chase, D.L.S., 1911.....	31
Roche Lake, A. V. Chase, D.L.S., 1910.....	29
Scottie Creek Valley, A. V. Chase, D.L.S., 1911.....	31
Skuhun Creek Valley, A. G. Stacey, D.L.S., 1907.....	17
Spius Creek, A. V. Chase, D.L.S., 1912.....	42
Stein Creek Valley, J. A. Calder, D.L.S., 1912.....	40
Sullivan Creek Valley, Jos. E. Ross, D.L.S., 1906.....	15
North Thompson River, Jos. E. Ross, D.L.S., 1906.....	15
" " " A. G. Stacey, D.L.S., 1907.....	17
North and South Thompson rivers, R. D. McCaw, D.L.S., 1909.....	13
North Thompson river, C. H. Taggart, D.L.S., 1912.....	36
Thompson River Valley, J. A. Calder, D.L.S., 1912.....	40
Three Mile Creek, A. G. Stacey, D.L.S., 1907.....	17
" " R. D. McCaw, D.L.S., 1910.....	27
Tranquille Forest Reserve, R. D. McCaw, D.L.S., 1910.....	27
" " " A. V. Chase, D.L.S., 1911.....	31
Tranquille Valley, Jos. E. Ross, D.L.S., 1910.....	23
Tunkwa lake, A. V. Chase, D.L.S., 1910.....	29
Venables Creek Valley, A. V. Chase, D.L.S., 1912.....	42

LIST OF TOWNSHIPS, REPORTS OF WHICH ARE CONTAINED IN THIS PAMPHLET.

WEST OF THE SIXTH MERIDIAN.

<i>Townships.</i>	<i>Range.</i>
16, 17, 18, 19, 20, 21, 22, 23	16
16, 17, 18, 21, 22, 23	17
16, 17, 18, 19, 20, 21, 22, 23	18
17. 18. 19, 20, 21, 22, 23, 24	19
17. 18. 19, 20, 21, 22, 23, 24	20
16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26	21
14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	22
11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	23
15, 16, 17, 18, 19, 20, 21, 22, 23, 24	24
15, 16, 17, 18, 19, 20, 21, 22, 23, 24	25
11, 12, 13, 15, 16, 17, 19, 20, 21, 22, 23	26
13, 14, 15, 16, 17, 18, 19, 20, 21	27
17, 18	28

PART II.

COMPRISING THE CENTRAL PORTION OF THE RAILWAY BELT,
EXTENDING FROM RANGE 16 WESTERLY AND SOUTHERLY TO
TOWNSHIPS 11, WEST OF THE SIXTH MERIDIAN.

CAMPBELL CREEK VALLEY.

A. J. Campbell, D.L.S., 1909.

Townships included in the following report:—

Range 16, townships 16, 17, 18, 19; range 17, townships 16, 17, 18; range 18, townships 16, 17; all west 6th Meridian.

The Campbell Creek valley through south part of township 19, range 16, through township 18, range 17, past Shumway lake and through township 17, range 17, including Trapp and Napier lakes, is narrow with steep slopes rising to either side. In township 19, these slopes rise to the east to a series of benches and in southeast part of the same township, steep slopes rise from these benches to the bench land adjoining Campbell lake. To the west of Campbell creek in township 19, the slopes are generally very steep and rocky. In township 18, range 17 the slopes, to the east of the valley and Shumway lake, are steep and in the north part are very rocky, rising to the mountain which covers the west part of township 18, range 16. To the west of Shumway, Trapp and Napier lakes, the slopes rise rapidly for 300 to 400 feet, and then run back on gentle rolling slopes to Long Lake forest reserve, attaining an elevation of 3,000 feet above the South Thompson river. A considerable part of this land is suitable for cultivation. In township 17, range 17, the slopes are steep for 200 or 300 feet and then run back to the east in gentle slopes to an elevation, on east boundary of township, of 3,200 feet above the South Thompson river; then, falling a little, cross township 17, range 16, to the Monté Hills Forest reserve, holding an elevation of 2,600 feet or more above the river.

The land in the bottom of Campbell Creek valley has been disposed of and nearly all the land of any value for agricultural purposes to the west of the valley in township 19, range 16 and townships 18 and 17, range 17. In township 19, range 16, there is considerable land available which would be good for agriculture, were it not for the lack of water, of which there is not sufficient quantity for irrigation purposes. On the bench land to the west of Campbell Creek valley, the settlers do not irrigate except in a few instances, but it is the opinion of the older settlers that the last few years have been especially favourable for cultivation without irrigation, and that seasons are likely to come when they will not be able to raise crops without it. Irrigation in this part would be a difficult matter, as there is not sufficient water available without extensive construction works. The soil in this district varies, being generally a sandy clay with a certain amount of gravel and in open places, is black loam over sandy clay subsoil.

In township 19, range 16, to east of Campbell Creek valley, there is a fair growth of fir and bull pine, particularly near the creek; while in the southeast part of township, there are large open spaces with clumps of small poplar and a few scattered fir. To the west of valley in the same township, the bush is very scattered and scrubby,

excepting in sections 20, 21 and 29, where there is some fir and bull pine timber. On the hills to the east of Shumway lake, there is a good growth of fir and bull pine, while to the west of Shumway lake, in township 18, range 17, it is practically open country. To the west of Trapp and Napier lakes, through township 17, range 17, and along south and east parts of township 17, range 18, there is no bush. The west part of township 17, range 18, is covered with bush, consisting of some fir of good size and small fir, jackpine, poplar and brush. To the east of the lakes and extending from two to three miles to the east, it is open country. The east part of the township is covered with bush containing fir and a few bull pine of good timber value, also jackpine, small fir, poplar and brush. Township 17, range 17, is all covered with bush, generally small jackpine, with some fir in places, particularly along the western range of sections, where it is of good timber value.

On the open country, bunch grass grows, affording the best of grazing. In the timber, there is a good growth of timber grass suitable for grazing in the spring season. All the open country is taken up in grazing leases, and, from appearances, is overstocked, the grass being eaten off close to the ground early in the fall. It is the opinion of the settlers that twenty acres per head of stock, is no more than sufficient, some of them place it as high as thirty acres per head, and, even then, it is necessary to winter feed.

The growing of fruit has not been carried on very extensively as yet in this region. On the bottom lands, along the South Thompson river, there are a number of small orchards which are doing well. Apples of all kinds, plums and cherries can be successfully grown. Fruit could likely be raised on the lower benches as high as 800 feet above the valley bottom. Around Grand Prairie, there are a few apple trees, the "Yellow Transparent" being the most common variety, but the district is better adapted for farming. Along the valley of Monté creek, there are a few fruit trees, but these are very young at present and it is doubtful whether they will be a success or not. On the bench land in the north part of township 19, ranges 15 and 16, fruit would probably do well. There is one orchard in the east part of township 19, range 15, and several orchards near Campbell creek, in the north part of township 19, range 16. Up the valley of Campbell creek, there are also a few orchards. Mr. McLeod at the north end of Shumway lake has a fine orchard containing apples, plums, and cherries and small fruits of all kinds. This orchard is at an elevation of over 1,000 feet above the South Thompson river, and its success is probably due to the local influence of Shumway lake.

On the higher benches and slopes above the South Thompson, farm products of all kinds are a success. Up the Martin Creek valley grains and vegetables are grown. In the Paxton valley, the Upper Monté Creek valley and around Grand Prairie, vegetables and grains are grown, but the principal crop is hay, for winter feeding. On the benches to south of township 19, range 15, and those in the vicinity of Campbell Lake, grains and vegetables are raised, though there is some danger of summer frosts, particularly in those parts farthest south which are near the timbered land. On the bench land around Shumway, Trapp and Napier lakes, grains and vegetables are also raised.

Accompanying this detailed report is a scheduled report by section, township and range, giving a description of each parcel of land examined. A table of areas of the several classes of land and a table of temperature taken throughout the period of these surveys is annexed to the said scheduled report.

VALLEYS OF NORTH AND SOUTH THOMPSON RIVERS, LOUIS CREEK AND DEADMAN RIVER.

R. D. McCaw, D.L.S., 1909.

Townships included in the following report:—

Range 16, townships 20, 21, 22, 23; range 17, townships 21, 22; range 18, townships 20, 21; range 19, townships 20, 21; range 20, townships 21, 22; range 21, townships 21, 22; range 22, townships 22, 23; all West 6th Meridian.

NORTH THOMPSON RIVER (EAST SIDE).

On the east side of the North Thompson river, quite a number of settlers are located both along the bottom lands and on the slopes falling towards Sullivan creek, Edwards creek and Hefferly creek. Rocky hills rise from the bottom lands along the river, and east of these is a rolling and hilly area containing some agricultural land, which has not yet been disposed of.

The soil varies in character and composition, but is generally a stony, sandy or clay loam, with black loam supersoil in many of the depressions. Rocky outcrops appear scattered all over, and usually on top of the many knolls. The soil is very dry and vegetation is often burned from the heat of the sun. In some of the depressions the grass is more green and shows evidence of being supplied with moisture. Much of the country is open, but the large area is grown over with scattering fir and bull pine.

In township 22, range 16, along the upper part of Edwards creek, some settlers are located on land having an altitude from 2,000 to 2,300 feet above the valley of the North Thompson. Their own evidence is that grain will not ripen there and that vegetables do not thrive owing to late spring, summer frosts and early fall. From 1,800 to 2,000 feet above the main valley seems to be the extreme limit of successful cultivation.

The fruit land in the area east of the North Thompson river is very limited in extent, but few places being suitable for profitable growth. The orchards on the benches along the river seem to do well, and in most instances irrigation is used. In the district east of the North Thompson river, the general opinion is that irrigation is necessary for cultivation and failures have resulted from dry culture tried by some of the settlers. The settlers on the higher lands have a grievance owing to the entire water rights being held by the older and more established settlers on the low lands along the North Thompson. All of the creeks shown on the plan accompanying, have a fair to good flow of water, and if properly distributed, should irrigate nearly all lands of agricultural value east of the river and west of the Niskonlith Forest Reserve and Edwards mountain.

There are three timber berths on the west side of and adjoining the North Thompson, numbers 462, 434 and 291. The timber in these seems of very low grade, usually rather scrubby fir and bull pine. Some timber has been logged in all three. Much timber of value was seen outside these berths and it has been fully dealt with in the detailed schedule annexed. Grass grows over the greater part of this area and there is much open range, but more that is partially timbered. Again in this district the grazing is poor in many places and twenty acres is too small an area to feed one head of stock.

LOUIS CREEK.

Louis creek is tributary to the North Thompson river and empties into it in the provincial lands north of the Railway Belt. Steep slopes close in this valley on both east and west sides, and leave only small areas of available land, that have not been

disposed of. In some instances these lands have been cultivated by the settlers on adjoining lands. As a general rule, the small fractions are not worth taking up alone, so they might be disposed of to the owners adjoining.

NORTH THOMPSON RIVER—(WEST SIDE).

The west side of the North Thompson river is similar in many respects to the east side. The lower bench along the river is all disposed of and much of the land is open with scattering fir and bull pine. There are not as many settlers on this side of the river, owing to the fact that there is less available agricultural land. Irrigation is very difficult to obtain here for the parts that need it and generally the cost of irrigation works would be rather extreme. Jamieson creek and McCaulay creek would furnish water for some parts in close proximity to them. In the easterly third of township 21, range 18, it is impossible to get irrigation without extreme cost and the small area of land which would be made valuable thereby does not seem to warrant it.

There is no land available for agriculture in timber berth 440. The timber in this berth has apparently not been logged yet. In township 23, range 17, and the north part of township 22, range 17, there is a great deal of timber of good lumber value. It consists chiefly of Douglas fir and bull pine and varies in size from 10 inches to 36 inches; the larger trees being more scattered.

SOUTH THOMPSON RIVER AND KAMLOOPS LAKE (KAMLOOPS TO SAVONAS).

North of Kamloops lake very little land of agricultural value was found. Except where intersected by Tranquille river and Copper creek, steep, broken, rocky slopes fall to the lake. To the north of these slopes, the land is usually high and broken. The valley of Tranquille river is very narrow and almost for the entire length, steep rock slopes fall to the water's edge, forming a canyon in the lower part of that river. At the junction of Watching creek and Tranquille river, a small area of agricultural land was found and also about seven or eight miles up stream, from the same point, a larger area bordering the river was found. Three squatters were located here; the Davis brothers. Copper creek has a wider valley, but nearly all of the agricultural land is disposed of. In the north part of township 22, range 21, an area of fair agricultural land was found in the vicinity of the Red lake.

The soil in the foregoing lands varies. The general formation is a stony, sandy loam, but black loam is found occasionally.

The crops in this area of land are very limited. A little hay was being grown along Copper creek and around Lac du Bois. In the lower bench at the mouth of the Tranquille river, hay was being grown by Edmund Cooney. Mr. Cooney also has a fine orchard of apples, plum, pear and cherry trees of many varieties and which bear fruit in large quantities. He used irrigation, and stated that it is necessary for successful cultivation.

In township 21, range 18, irrigation is generally difficult or almost impossible to obtain and apply, on account of the scarcity of water and the rolling and hilly surface of the ground. Some of the settlers in this township state that irrigation is not necessary, but they have made no successful test supporting their statement. In a few instances it was observed that garden crops on slopes suffered from lack of moisture. Very likely the depressions which have black loam supersoil, will not need irrigation, although it would improve the growth. For lands along Tranquille river, water could be obtained from it for irrigation purposes and the Red lakes and Criss creek would supply water for the area of agricultural land in the north part of township 22, range 21.

There are no timber berths north of Kamloops lake, although a fine growth of fir and bull pine exists in many parts. The entire area is timbered more or less except parts of townships 20 and 21, in range 18, and some of the slopes adjoining Kamloops lake. Grazing is fair in the lands examined, but the grass is of insufficient quantities to stock the country at the rate of one head per twenty acres.

DEADMAN RIVER.

In the valley of Deadman river, nearly all the land of value has been disposed of. Steep, rocky slopes rise on each side and, in places, rocky cliffs rise to a high altitude. The soil is sandy loam and in parts is made up of much coarse disintegrated rock. Hay seems to be the chief product grown, as the settlers are engaged in ranching. Mr. Beamish, who is located near the junction of Gorge creek and Deadman river, has a small orchard which he does not irrigate. Apple and plum trees are doing well. The grazing in this valley is very poor.

GENERAL.

From personal observation, and evidence gathered from settlers, in the district north of the South Thompson valley, between Adams river and Savonas, the limit of altitude of successful cultivation was found to range from 1,800 to 2,000 feet above the main valleys. In a number of places, apple and plum trees were found growing at an altitude of 1,600 feet above the main valley, but the product gathered was very inferior and the limit of fruitlands was drawn at about 800 feet above the main valleys. Throughout, vegetables of all kinds were being successfully raised, but in nearly every case irrigation was used.

The settlers all find a ready market for their produce. Kamloops is the only town in the district and much of it is disposed of there. Shipping points are conveniently located along the C.P.R. at Shuswap, Ducks, Kamloops, Tranquille, Cherry Creek and Savonas, and it is surprising to see the amount of export from this locality.

One feature that should not be omitted is the mineral wealth of the locality north of Kamloops lake. At present there are many holdings of claims, but none are in extensive operation, owing to the absence of transportation and smelting facilities. Copper ores are very common and cinnabar is found along Copper creek. In the future, when the country is being worked for mineral, another market will be opened for the produce grown by the settler.

At present no subdivision surveys exist in the north part of township 22, range 21. There is a very fair area of agricultural land in this district and two squatters are anxious to obtain entries. The same condition is found in sections 1, 11 and 12, in township 22, range 20, along the Tranquille river.

KAMLOOPS DISTRICT, NORTH THOMPSON RIVER (VICINITY OF ASHCROFT AND SPATSUM), SOUTH OF KAMLOOPS, LONG LAKE, SULLIVAN CREEK VALLEY, ETC.

Jos. E. Ross, D.L.S., Season 1906.

SIR,—I have the honour to submit the following general report on my surveys during the past season in the railway belt, British Columbia.

A year ago to-day I began the season's work by making two small surveys along the line of the Canadian Pacific railway, one near Ashcroft, the other opposite Spatsum. At the first place there is a little cultivable bench land which would need to be irrigated. The soil, however, is of such an absorbent nature that when irrigated it has a tendency to cause slides. For this reason I understand the railway company objects to the lands adjacent to the track in this locality being irrigated. It has already been the cause of several very expensive lawsuits in which the company so far has been successful. At Spatsum the land surveyed is adapted only for grazing, being stony, hilly and broken. This land I understand was being taken up or applied for on account of the gypsum deposits on it. Some development work has been done but I did not make any examination of it.

My next work was the subdivision of the range lands on the hills immediately south of Kamloops. These lands are covered by grazing leases. It has been a matter of contention between the lessees and the settlers as to whether the land is fit for general farming or not. The general opinion appears to have been that the land was unsuited for farming otherwise it would have been taken up and settled on many years ago. Some fifty or sixty squatters have located here within the last two years. Time alone can tell how successful they will be. Probably a few will do well while others will abandon it. The conditions have been unfavourable. The last two summers have not only been dry but they have been preceded by winters with a very light snow-fall. Last summer the grasshoppers did considerable damage to the crops. The country is mostly open but there is sufficient fuel for many years. In the gulches and low places there are poplar groves which furnish fencing material. The surface is undulating, gently rolling and hilly. The soil is rather light but fairly good around the base of the hills. The water is mostly alkaline. There are no mountain streams but numerous ponds and small lakes. Water for domestic purposes can generally be obtained by digging. There are also good springs. The altitude is from three thousand to four thousand feet above sea level. There are numerous prospects and mineral claims but so far only one proved to be a mine.

From the Kamloops range I went to Long lake where I subdivided the remaining unsurveyed lands. The character of these lands is precisely similar to those just described. The best of the land was surveyed and settled on quite a few years ago. From here I continued farther south to the belt boundary at Stump lake. I surveyed a few sections here along the boundary and west of the lake. This country is rougher, being rocky and broken and fit only for grazing. Several mineral claims have been located here. There are fairly good wagon roads leading from Kamloops to all the lands surveyed to the south. A climb, however, of about two thousand feet has always to be made.

I next went to the main valley of Sullivan creek on the east side of north Thompson river where I surveyed a few sections along the north limit of the belt and corrected or changed some of the old surveys which had been made before the present boundary had been decided on. This survey was made chiefly to meet the requirements of settlers who had located here recently. The country here is partly open and partly timbered. The bottom land of which there is but a small quantity has considerable brush on it. The high land requires to be irrigated. There is not sufficient water for this purpose unless the lakes at the head of the creek are drained. All the suitable land for farming has already been taken up. There is a good wagon road from Kamloops by way of Hefferly creek. There is an ascent of about fifteen hundred feet.

From here I came down to north Thompson valley where I spent some considerable time making surveys to fix the location of some old provincial lots so that the areas of the adjoining quarter sections might be found. This kind of survey involves a great deal more work than would be called for in making an original survey. It is often unsatisfactory as the old lines or corners can not be found and much of the work done seems to be to no purpose.

On completing the work here I went to Revelstoke where after making a small survey west of the town I proceeded to connect the right-of-way of the Arrow lake branch of the Canadian Pacific railway with the Dominion section lines. A little delay was occasioned here through not knowing the exact way in which the survey should be made. The weather, too, which had, so far, been fine, turned wet and continued so for almost the remainder of the season.

From here I went south to the valley of Incomappleux river. From the boundary of the belt I made a sectional survey about six miles up the river. I also traversed both banks of the river. The valley is about three-quarters of a mile in width and has steep mountains on each side. On the mountain side the timber is medium sized hemlock, cedar and fir. On the higher lands in the valley there is some very large cedar. On the low lands the timber is spruce and cottonwood. The greater part of the valley

is fit for settlement and the climate is not unfavourable. The cost of clearing an acre of the best land would range from one hundred to two hundred dollars. Freshets occur in the river during spring and after a heavy rainfall of several days duration when low lying lands are flooded. The most valuable natural resources of this district are the timber and minerals. The timber is very conveniently situated to the river which is navigable for logs at certain stages of the water. Very rich mineral has been found here but most of the claims are high up on the mountains, and as transportation is by means of pack horses the cost of getting the ore out is too great to permit of the mines being worked at a profit. There are numerous small streams flowing into Incomappleux river, upon each of which there is some available water-power. Goat were seen on the mountain sides and marten, mink and weasel in the valley. The usual route to this district is by way of Revelstoke, thence by the branch line to Arrowhead, thence by steamboat to Beaton or Comaplix, thence by stage to Camborne; from the latter place there is a pack trail up the valley on each side of the river.

On my return to Kamloops I made several small surveys on Shuswap lake (two on Mara and one at Cinnemousun narrows). All these lands had been applied for. Years ago it was thought that all the land suitable for settlement in the railway belt had been surveyed and taken up but still the settlers continue to come and squat on land where the prospects of making a good living are not at all promising. I think it is the good climate rather than the land which induces people to come to British Columbia; this is especially the case where people come from the Northwest.

KAMLOOPS DISTRICT—NORTH THOMPSON RIVER, THREE MILE CREEK, KAMLOOPS LAKE, SKUHUN CREEK VALLEY, ETC.

A. G. Stacey, D.L.S., Season 1907.

SIR,—I have the honour to submit the following general report on my survey operations in the Kamloops district, British Columbia, during the season of 1907.

On April 26, I left Ottawa for Kamloops, British Columbia, where I met Mr. J. E. Ross, D.L.S., with whom I arranged a division of the work lying within the Kamloops district. It was decided that Mr. Ross would undertake the surveys to the east of Kamloops, while I devoted my attention to those townships lying to the west of the city. A week was spent at Kamloops in organizing the party and outfitting for the season's operations. In this task I was most generously assisted by Mr. Ross, who had had considerable experience in the work, and was thoroughly acquainted with local conditions. It was considered advisable not to purchase any transport outfit, but to hire such services as they were required.

On May 13, we left Kamloops, a party of seven, for our first camp on the left bank of Thompson river in township 20, range 18, west of the sixth meridian. Selecting what appeared to be a desirable location, we pitched camp on what afterwards proved to be an island separated from the mainland during high water by a narrow channel which, at that time, was perfectly dry. The water rose so rapidly that in four days' time we were forced to wade the channel through two feet of water and transfer our camp outfit to higher and safer quarters. The work in this township consisted, for the most part, in attempting to locate the boundaries of old provincial lots, and to connect them with the section lines of the Dominion lands system. The results of such work are likely to prove unsatisfactory both to the department and to the surveyor in charge. Where the corners of lots were originally marked with wooden posts and stone monuments they can usually be located with little difficulty; but where the positions were defined only by wooden posts driven a few inches into the ground, it is often impossible to locate the original corners. This is particularly true in the case of lot corners situated within or near the right-of-way

of the Canadian Pacific railway. The company seems to have exercised no care whatever in the preservation of survey marks, almost every monument placed in the immediate vicinity of its premises being utterly destroyed, either during the construction days or by fires kindled by the company's employees at various times since then. A most thorough search for the different corners of the various lots mentioned in the instructions was made, and while in several cases the search proved futile, I believe a sufficient number of points have been located to enable the draughtsman to place the lots in their correct positions with reference to the section lines. In any event, the best information that can be gained by a careful survey of the ground has been obtained.

Some of the old section line surveys in the southern part of the township seem to have been very carelessly performed. More retracing of lines affecting the closing of blocks in which we worked could have been made to advantage, though it is difficult to estimate where this retracement would cease if satisfactory results are to be obtained. Owing to the number and urgency of other surveys demanding attention, I decided to leave further retracements for some later date. The work being located near Kamloops can easily be attended to by Mr. Ross at his convenience.

Quarter section monuments were found on the east boundaries of sections 8 and 9, though the department seems to have no record of such. These may have been located from a traverse of the boundaries of lot 443. They were left undisturbed, the lines joining them with the section corners to the south being retraced in both cases.

We were fortunate in securing the use of a small gasoline launch for crossing and re-crossing the river while at work on the north side.

On the forenoon of May 30 the party, with the addition of another member, moved by launch to Savonas, a small town at the mouth of Kamloops lake. From Savonas a good wagon road leads southward up Threemile creek valley to the divide between Thompson and Nicola rivers, thence, following Guichon creek, leads into Nicola valley. A thirteen mile drive up this road brought us to the crossing of Threemile creek, where we encamped for subdivision work in township 19, range 21. In this township some heavy timber was encountered, especially in the eastern tier of sections, where the progress of the work suffered for want of additional axemen. I endeavoured, by mail, to secure temporarily the services of two more men, but the effort was unavailing. In consequence, the survey of 26 miles of section lines and four miles of traverse kept us employed continuously from May 31 to July 17. The elevation here is about 4,000 feet above sea level; the nights were invariably cool, and the not too excessive heat of the day was relieved by frequent thunderstorms. The location is, in many respects, ideal for the prosecution of survey work during mid-summer months.

From this plateau we moved to the southern shore of Kamloops lake about three miles west of Cherry Creek station in township 20, range 20. After running a few miles of section lines and locating such corners of lots 407 and 417 as could be found, we proceeded to make certain check and triangulation surveys in the vicinity of Kamloops lake, in accordance with instructions under date of June 3, 1907. The disagreement between the surveys on the opposite shores of the lake was pretty thoroughly checked by means of five distinct triangulations and a number of connecting traverses joining together the different surveys made along the northern shore. Through these ranges telegraph poles were used almost exclusively as reference marks for Canadian Pacific traverse stations, and as the original poles have long since been replaced by new ones the stations are lost. Finding it impossible to tie the surveys to Canadian Pacific traverse stations, connection was made with section and quarter section monuments near the railway, many of which were doubtless established directly from Canadian Pacific traverse stations. Near the township line between ranges 20 and 21 a pine tree used as a reference mark, for a Canadian Pacific traverse station, was noted and the survey tied thereto.

The results of this work indicate that throughout range 19 and the eastern half of range 20 the monuments on the north side of the lake are approximately 3 chains too far south, while those in the western half of range 20 are approximately 6 chains too far north. An error was found in the position of the monument marking the northeast corner of section 27 in township 20, range 19. It is 1.71 chains too far north to agree with the positions of the monuments immediately to the west and was found by Mr. Ross to be about 2.50 chains too far north to correspond with the positions of the monuments to the east. Another error was located in retracing the survey lines about the southeast quarter of section 14 in township 21, range 21. The west boundary of this quarter section was found to be one chain short and the north boundary 2.73 chains short of the theoretical lengths. These errors were corrected, new monuments erected and section lines run connecting this survey with that in range 20. With the exception of these errors, the old survey lines on the northern shore of the lake would seem, from the retracement, to have been surveyed with unusual accuracy both as to alignment and measurement. Unfortunately the opposite seems to have been the case with many of the early surveys made along the southern shore.

For this work we hired the use of a fairly good skiff, which proved a great convenience in travelling to and from camp while working along the northern shore, where the surface of the country is extremely rough. For crossing the lake a boat of some kind was a necessity. Though we shifted camp no less than three times we were frequently obliged to work at considerable distance from headquarters, entailing much loss of time and energy. This, however, seemed unavoidable owing to the scattered and irregular nature of the surveys. The members of the party seemed less concerned with the hardships and inconvenience of the situation than with the danger constantly occasioned by the presence of the deadly rattlesnake. Fortunately none of the party were bitten though a number of these reptiles were encountered.

In making the survey of section 36, township 20, range 22 a quarter section monument of which the department had apparently no record, was discovered on the east boundary of section 35. It was presumably established from the Canadian Pacific traverse survey. The monument was renewed and the section line extended therefrom. The old witness monument on the east boundary of section 36 being lost, a new one was erected.

On August 27 we made our first move by rail, from Savonas to Semlin, a railway siding in township 21, range 23. There being no trail on the south side of the river it was impossible to secure a conveyance for transferring the outfit and supplies to the nearest camping ground on the bank of the river about one-third of a mile distant. It was therefore necessary to resort to the laborious process of packing the entire outfit on our backs; an interesting experience repeated some eleven days later when again breaking camp. In this township an old witness post and cairn were found near the northeast corner of section 11 on the left bank of Thompson river. The post had no distance marked on it. As this corner was also witnessed by a monument on the right bank of the river it seemed a case of duplicate marking for the same corner. Some subdivision surveys having been made on the north side I decided to destroy the witness monument placed on the south side and leave the corner as located from the north in agreement with these surveys. There is no crossing of the river in this vicinity, so a member of the party was sent around by way of Ashcroft to locate this witness monument, but failed to find any trace of it. The corner was consequently re-established from the witness monument marking the quarter section corner on the east boundary of section 14. Upon producing southward the section line thus defined another monument was found for the quarter section corner on the east boundary of section 11. This I also destroyed and erected a new one in agreement with the monuments established on the section line farther north. The northeast corner of section 6 was also re-established from the north, the original monument having been destroyed. A wooden post and stone mound was

found marking the northeast corner of township 20, range 24. Though its position does not agree with the surveys in township 21, range 23, the monument was left undisturbed and the line joining it to the quarter section monument to the north was retraced. The lands affected by this disagreement are not very valuable and hence there is no urgent need for readjustment.

From the various cases cited above, it would seem that a considerable number of section and quarter section corners, convenient to the railway, were established some years ago, probably from Canadian Pacific traverse stations, but that no record of such monuments was furnished to the department. When in the extension of the subdivision surveys, these unrecorded monuments are met with, the surveyor must either recognize them and leave all the discrepancies of the survey in the closing or destroy the monuments and erect new ones in accordance with his own survey. The surveyor must, in each case, after carefully considering local conditions, depend upon his own judgment in deciding which course he is to pursue. Complications are apt to arise in the case of witness monuments for corners falling within the bed of the river, as the surveyor making the subdivision on the north side of the river is not likely to discover witness monuments placed on the south side, and hence duplicate markings result.

After travelling by train to Ashcroft and making the surveys required in township 20, range 24, we moved to township 29, range 23, and made sufficient subdivision surveys to cover all the desirable land in that township. The road leading from Ashcroft to this plateau is very winding with an exceedingly heavy grade. Despite the fact that the roadbed was hard and smooth, four good horses found difficulty in hauling up the outfit, the outfit weighing probably less than a ton.

On September 26 we moved into Ashcroft, purchased additional supplies and the same day drove seventeen miles up the Cariboo trail to the correction line between townships 22 and 23, in range 25. In performing the surveys required in these townships, we were careful to connect with the corners of all lots and surveyed mineral claims affecting the lands being surveyed. It is possible that in one or two cases connecting traverses were made which were not absolutely necessary, but in the absence of positive information that such work had previously been performed by another surveyor, it was deemed advisable to make the connections. In most cases, where section lines intersected the boundaries of lots and surveyed mining locations, monuments were placed at the intersections. The work in township 23 brought us within one mile of the limit of the railway belt. We produced the section line another mile and placed a monument on the limit which is not surveyed through this township.

The work in township 22, range 26, was attended to next. While camped there three of the party made a flying camp to township 20, range 26, up the Hat creek road and connected lot 1072 with the Dominion lands system. In order to furnish the agent of Dominion lands with some additional information concerning this lot, I retraced all the boundaries thereof and made complete topographical notes of the adjacent lands and improvements.

On October 31 we moved by wagon into Ashcroft and secured transportation to Spence bridge on the first local freight passing southward. The same evening we moved across the river and some three miles up country, where we were generously accorded the use of a vacant house while working in township 17, range 25.

The branch line of the Canadian Pacific railway up the Nicola valley afforded easy means of transportation to township 15, range 23. The wooden post placed at the southeast corner of lot 566 in this township has been washed away by Nicola river, which at that point has encroached considerably upon the lands situated on the right bank. Connection was made with bearing trees at the northeast corner of this lot, with other lots previously connected with lot 566 and with the northeast corner of the Lower Nicola Indian reserve, number 10.

In order to reach the Skuhun Creek valley we ran east across the north boundary of section 10, thence due north three miles over the divide between Nicola river and Skuhun Creek valleys. At this point the divide reaches an altitude of 2,500 feet above

Nicola river and the ascent from either valley is steep and difficult, though fortunately no inaccessible barriers were encountered. A squatter in section 26 has constructed a wagon road from the mouth of Skuhun creek to within two miles of his cabin. By travelling down the Nicola valley to the Indian village at the mouth of the creek and following this newly constructed road up the valley, the outfit was brought by wagon to our new camping ground in section 27. In this valley section lines were run west as far as the Indian reserve and north and east to the limit of the railway belt effecting a closing at the northeast corner of section 1, in township 16, range 22. For the completion of this work one more camp shift was necessary, and for the first time during the season's operations pack-horses were employed. It was intended, while in this valley, to extend the surveys so as to include some meadows lying approximately in sections 34 and 35, township 15, range 22, but owing to the scarcity of provisions in stock, the severity of the weather, the depth of the snow and the difficulty experienced in securing pack-horses under such unfavourable conditions, we were unable to do so. The elevation here is about 7,000 feet, above sea level, the snow was already fifteen inches deep and the weather decidedly cold. In the entire valley there are but two settlers located, neither of whom has made improvements of much value. It would seem, therefore, that further surveys are not particularly urgent, especially as the land best suited for settlement lies six miles beyond the upper termination of the wagon road, the only means of access being an Indian pack trail. From the section lines established subdivision lines can be projected as required to meet future demands.

On December 19, an Indian packing outfit brought the party down the Skuhun Creek valley to Clapperton, a station on the Nicola branch of the Canadian Pacific railway where we boarded the local train for Spence Bridge the same evening. Here the party was discharged with the exception of the assistant who accompanied me to Lytton on the following day, where I met the agent of Dominion lands and discussed with him the surveys to be made at that point. The work in Lytton was completed on the evening of December 25. The next morning we reached Kamloops, where the assistant was released, the outfit stored and all necessary arrangements completed for the closing of the season's field operations.

In the performance of the season's work every reasonable precaution to secure accuracy was observed. The alignment was checked by frequent astronomical observations and the measurements carefully rechecked except in a few cases of closed surveys where no further check was considered necessary. In the early part of the season solar observations were used exclusively. During the long days in June satisfactory stellar observations, with a glass diaphragm, could not be obtained until late in the afternoon, and as camp was usually some miles distant the solar observations were more convenient. During the latter part of the season observations were made on polaris. A sidereal watch, corrected by observing the transit of time stars, was used for noting the time. As a rule, at least two observations were taken at each observation station to guard against possible errors in recording vernier readings. The measurements were made with a five-chain steel tape and a clinometer.

The surveys were scattered and irregular, constantly necessitating the starting of new lines. Old surveys had to be connected or retraced, doubtful monuments investigated, fresh obstacles due to the mountainous character of the country almost daily surmounted, in all of which the closest personal supervision of the surveyor was required. The valley lands, being the most valuable, were surveyed many years ago and the lines gradually extended up the hillsides, with the result that the surveyor has now to climb to an elevation varying from 500 to 2,000 feet above the camp in the valley in order to reach the lines he is projecting. The devotee of the strenuous life need seek no more congenial field than that enjoyed by the surveyor in charge of a party performing miscellaneous surveys in the Kamloops district.

All necessary supplies can be secured at any of the small towns along the railway, though the cost of provisions and camp equipage is much greater here than at either Vancouver or Winnipeg. This financial disadvantage to the surveyor is, to a certain

extent, compensated for in the enjoyment of a fairly good mail service and other conveniences consequent upon the proximity of the railway, so often denied other members of the fraternity in the pursuit of their profession.

The city of Kamloops with a population of about 2,500 is the most important centre in this district. It is a progressive little city operating its own water works and electric lighting systems. As a divisional point of the Canadian Pacific railway and a distributing centre for the north Thompson valley and the ranching country to the south it is the scene of considerable commercial activity. A court house, provincial asylum and hospital are located here. Ashcroft, a town of five hundred inhabitants, is the gateway of the Cariboo country to the north. From here great freight wagons drawn by eight and ten-horse teams and laden with tons of supplies leave for their tedious journey of two hundred and fifty miles into the interior. A splendid stage service with headquarters at Ashcroft forwards the mail and provides accommodation for the travelling public. This busy little town is supported partly by the forwarding industry, though there is also a considerable local trade. Savonas and Spence Bridge are small railway towns forming supply stations for sparsely settled ranching districts.

This district boasts of a delightful climate. After traversing nearly one thousand miles of bleak, frozen prairie with scarcely a green blade to give promise of the approaching spring we were ushered through the gate of the Rocky mountains, past the magnificent scenery of the Selkirk range and down the western slope into the smiling valley of the interior, or richly clothed in nature's verdant garb. Vegetation here is several weeks in advance of that in either Ontario or the prairie provinces. The long summer season is usually very dry and the air clear and invigorating especially in the Thompson river valley, which is becoming a favourite health resort for sufferers from pulmonary trouble. The autumn weather is ideal, warm, bright and cool, cloudless nights following each other with almost monotonous regularity throughout the greater part of the season. The winters are short and cold with a light snowfall in the valleys. Peach orchards, vineyards, &c., rarely suffer from the severity of the climate. Leaving the river valleys and ascending the hills a gradual yet very perceptible change in climate is experienced. As the elevation increases, the temperature lowers, summer frosts become frequent, rendering the cultivation of vegetables and cereals impossible, the precipitation increases and the winters lengthen.

In the valleys of the Thompson river and of its larger tributaries, Bonaparte and Nicola rivers, the country is largely prairie dotted with small scattered pine and fir. The nutritious bunch grass, which at one time covered these ranges, furnishing ideal pasturage, has disappeared and in its stead flourishes, in many places, the worthless and unsightly sage brush. The sparse growth of other grasses gives the country a somewhat barren appearance, though herds feeding on these grounds look remarkably well. Where irrigation is employed, the soil proves very productive. Back from the valleys the hills furnish good grazing lands for the summer months. Though there are open patches on some of the plateaus, the country is mostly covered with a forest of bullpine and fir. The former makes very good lumber for ordinary uses. The latter is largely manufactured into square timber, being strong and durable, though it does not produce a good quality of lumber. Many of these forests would be valuable lumbering centres, were it not for the difficulty of getting the logs to some navigable stream. Sawmills are at present in operation at both Kamloops and Savona, though the lumbering industry has not assumed very large proportions in this district. Some of the plateaus are covered with banksian pine which is of little value, except for fuel. These forests support a luxuriant growth of grass and are usually free from underbrush. The cattle, however, much prefer the shorter grass of the more open patches and resort to the timber pastures only when the other fails or the weather proves too severe in the open. The lakes on these plateaus are almost invariably alkaline, though fresh water of excellent quality is found in almost every stream. Cattle ranching has been, and still is, the chief industry. Such rich bottom lands as could be easily

irrigated were secured by early settlers engaged in this industry. These holdings yield two crops of hay during a season, furnishing winter provender for herds which, during the summer months, roam at will over the neighbouring hills.

Another industry of some promise, attracting increasing interest during recent years, is the cultivation of fruits and vegetables. In various places throughout the valley of Thompson river small areas have already been given over to the cultivation of these products, with most gratifying results. The character of the climate, combined with the richness of the soil, when properly irrigated, furnishes a product absolutely unexcelled in quality. Exhibitors from this valley have carried off the highest awards at international exhibitions on both sides of the Atlantic. An excellent home market for these products helps to make the industry a very profitable one. The returns from this kind of farming are so great in comparison with the returns being at present realized that the early abandonment of cattle ranching in favour of the cultivation of fruits and vegetables seems inevitable. This would provide accommodation for a much greater population than the valley now supports, and would undoubtedly have the effect of directing more immigration to these parts. Promoters of this industry are already securing possession of some of the most valuable holdings. Meadows in higher altitudes could be utilized by those engaged in cattle ranching, so that this industry need suffer little more than the inconvenience of being driven farther from the railway.

This district is undoubtedly rich in minerals, though the mines have been little developed as yet. Low grade ores predominate. Capital is required both for the working of the mines and the erection of smelters for treating the ores. Copper is the mineral most in evidence.

Good government roads have been constructed through the valleys of the different tributaries of Thompson river. Heavy grades are often unavoidable, but the roadbed is usually solid and kept in good repair. In early summer, many of these highways, following the innumerable windings of the picturesque mountain streams as they noisily tumble from their dizzy sources to the stately river below, through valleys rich in scenic grandeur and heavy with the perfume of wild roses blooming in gorgeous profusion on every hand, are beautiful beyond description.

One of the noticeable features of the Pacific province is the cosmopolitan character of its inhabitants. Chinese, Japanese, Hindoos, native Siwashes, English immigrants and Canadian-bred citizens, constitute the chief elements in this confusion of races. Institutions sacredly guarded in eastern Canada receive little consideration from many of these people. The problem of the unassimilative elements is everywhere confronted and has already become the peculiar possession of the western statesmen.

In conclusion I wish to express my appreciation of the splendid services rendered the party by my assistant, Orville Rolfson, B. A. Sc., of Walkerville, Ontario, and by W. G. McElhanney, B.A., of Vancouver, B.C., who served in the capacity of articulated pupil.

KAMLOOPS DISTRICT, JAMIESON CREEK, TRANQUILLE, COPPER, CRISS CREEKS AND DEADMAN RIVER VALLEYS, ETC.

Jos. E. Ross, D.L.S., 1910.

SIR,—I have the honour to submit the following report of my season's operations in the Kamloops district of the railway belt of British Columbia.

On April 8, I started from Kamloops for Monte creek and Ducks range, to define the north boundary of the Martin Mountain Forest reserve. The land to the north of this reserve has been all settled within the past few years and only a few of the poorest quarter sections remain unoccupied.

After completing this survey I moved to the Jamieson creek country, on the west of North Thompson river, to survey the sections immediately to the east of, and to

locate the east boundary of, the Tranquille Forest reserve. This land is mostly open or openly wooded, and not very hilly. The soil is fairly good and if water were available for irrigation it would be well suited for farming. As it is, the extreme dryness has prevented the few settlers who have located here from meeting with success.

From here I moved to lac du Bois to begin the main work of the season, subdivisions in, and ties between the Tranquille, Copper creek, Criss creek and Deadman valleys. This was the largest continuous stretch of work I have had for some years, the work being usually composed of small scattered surveys.

The wagon road does not extend beyond lac du Bois so it was necessary to get a pack-train of six horses for transportation purposes. However there were generally good pack-trails throughout the country, and only on Criss creek was it necessary for us to clear out trails for our use.

The most promising farming land we saw during the season was in sections 1 and 11, township 22, range 20, west of the sixth meridian, on Tranquille river, where there is good soil, and water is available for irrigation. With the exception of this land, on which there are now three settlers, the Tranquille valley is narrow and rugged, with steep mountain sides 2,000 feet high and picturesque canyons. While the soil in the settled quarter sections is excellent and easily cleared, an occasional summer frost has each year killed the potatoes, and it seems very doubtful if the settlers will be able to raise them. At an elevation of 4,000 feet there is a plateau covered with dense bush, chiefly jackpine, and unsuitable for agricultural purposes.

The early advent of the Canadian Northern railway will be of great assistance to the settlers of Copper creek and Tranquille river if a siding is made at Copper creek. A road from there could be built at moderate cost up Copper creek and along the route of the present trail to Tranquille river.

After running ties to Copper creek and Kamloops lake from the Tranquille valley, I extended the survey up Copper creek and around the Red lake and Frog creek valley, in which there is no land suitable for settlement, on account of the dry climate and the impossibility of procuring water for irrigation. The land is suitable for grazing, and that is the best that can be said of it. One settler has located on a wild hay meadow in section 34, township 22, range 21, west of the sixth meridian.

A tie was run to the existing surveys on Deadman river, crossing a canyon on Criss creek and a high ridge between Criss and Deadman valleys.

The work was carried northward to Criss creek valley and another tie run to the end of the old surveys in Deadman valley.

In the northeast quarter of section 36, township 23, range 21, west of the sixth meridian, the valley of Criss creek becomes wide and partly open and for five miles to the north limit of the railway belt, there is a good strip of arable land in the brushy meadows along the creek. Just outside of the 'belt' there is a wild hay meadow, 100 acres in extent. While the land along Criss creek is good, and would be excellent agricultural land if situated at a lower altitude, its height, 4,000 feet, with prevalent summer frosts, renders it unsuitable for general farming. It may be a good valley for hay growing and oats may be raised but no test has yet been made. For years this valley has been used by stockmen of the district as a grazing ground. The boundary of the 'belt' was run from Criss creek to Deadman river, crossing a plateau wooded with jackpine.

A wagon road ascending the hill from Tobacco flats, on Deadman river, leads across this plateau to a settlement recently formed by some settlers on the upper Deadman river, in the provincial lands. A road has been built by the settlers from there to another settlement on the upper Bonaparte, where it connects with a government road leading to Seventy-mile House on the Cariboo road. The road from Tobacco flats is steep and rough, with rocks and side slopes that make travel difficult, and at times dangerous. We thought that we had found the worst road in British Columbia, but we were undeceived on finding a branch leading from this road to Snahooshe (Deadman) lake, on which there was a descent of twenty-five chains at an

angle of twenty-four degrees, with a sharp curve in the middle to add interest. For this descent a sled is used, a wagon being too difficult and dangerous to handle.

Deadman river is in a steep, rugged canyon. The 'belt' boundary crosses the valley at the north end of Mowich lake, over a mile south of Snahooshe, or Deadman lake, where a company which owns the land at Walhachin (formerly Pennys) is building a big dam for the purpose of holding water in the lake. This company has spent a great deal of money procuring water for irrigating their property. From Deadman river, at the mouth of Criss creek they have built a large flume about eighteen miles in length, while they have also built flumes and ditches from Barnes creek. As a result of their efforts the old Penny ranch has become the thriving village of Walhachin, a prospective fruit centre, with a population composed almost entirely of English people starting orchards which should in a few years, be very productive.

Having completed work in the Criss and Deadman valleys I moved to the Summer range, south of Savona, and ran a tie between the existing surveys on Guichon and Barnes creeks. The land here, 4,000 feet above sea-level, is very similar to that on all the plateaus, rolling, wooded country, with occasional hay meadows.

Having completed this work I sent the packhorses to Monte Creek to be wintered, and we went to Ashcroft, moving by train from there to Kamloops.

The remainder of the season was spent on subdivision surveys to the south of Kamloops in townships 17, 18 and 19, range 18, west of the sixth meridian. This land is about 4,000 feet above sea-level, rolling and broken and thickly wooded with jackpine. Each year sees some venturesome settler discovering an anticipated 'Mecca' in a wild hay meadow deeper in the jackpine forests than other settlers have penetrated. Thus the demand comes each year for an extension of the surveys in this district. After one attempt at raising a crop on the high meadows the majority of these hopeful settlers quit in disgust. On November 23, I completed the work in these townships and returned to Kamloops, closing field operations for the season.

The year was exceptionally fine and dry, only one day being lost on account of rain. The summer was too dry for the farmers and crops were poor throughout the district. In July and August the country was covered with a pall of smoke from several bush fires, but no great damage was done to timber, the flames keeping to the jackpine plateaus.

Tranquille and Deadman rivers and Criss creek are well stocked with small trout. Deer and bears are quite plentiful in the districts visited, while coyotes are everywhere present, making the night hideous with their yelping.

On Criss and Guichon creeks beaver have built long series of dams, flooding many small meadows. In no part of the year's itinerary were the beneficial results of the "close season" so strikingly evident as on Guichon creek, where we were fortunate enough to see the animals at work. They are marvellously tame, and took very little notice of our presence. However, the surveyor whose lines are continually striking ponds and dams, with dense willow, rising out of a couple of feet of water, is apt to consider the renaissance of the beaver a doubtful blessing.

The Summer range, between Savona and Guichon creeks is one of the foremost duck-hunting grounds in British Columbia. On the numerous lakes, ducks and geese abound in the fall. Red lake is a favourite breeding ground for ducks.

A surveyor's report from British Columbia is incomplete without some reference to the mosquito pest. This year we were fortunate enough to avoid it, being in country where the nights are cool, and stagnant water scarce. On Copper creek we encountered swarms of black-flies, and endured two weeks of misery.

Of the 230 days in the field there were thirty-three Sundays, one day was lost through bad weather, nineteen in moving camp, while the remaining 177 days were occupied in running 172 miles of line and marking corners.

Mining men have for many years had their eyes on the Tranquille. Near its mouth a gold dredge was tried unsuccessfully. At the "forks," that is the junction of Tranquille river and Watching creek, some placer mining was done in the early days,

but the ground has long lain idle. There is undoubtedly free gold there but up to the present it has not been found in paying quantities. Some prospectors were on the river this summer, and we heard rumours of wealth untold, and saw glowing advertisements of the prospective value of shares offered for sale, but the rumours remain unconfirmed.

At Copper creek and Criss creek we ran across mining claims.. At the former a company built a concentrator several years ago, and did considerable development work on cinnabar properties, but nothing is now done except assessment work.

Only a few years ago this Pacific province based its hopes of future greatness on its vast mineral wealth, but the pay-streaks of the past have dwindled to nothingness, and the few substantial mines that now operate are mostly of low grade ore. There have been many small booms, towns of rough buildings and tents rising with startling rapidity, only to fade away to the realms of unpleasant memory. British Columbia at last realizes that minerals are not her great asset, that the fertile soil of her valleys, her forests of giant trees and her salubrious climate are more reliable, and productive of greater wealth.

While the farmers were in bad luck this year on account of the exceptionally dry summer, other businesses thrived. Ashcroft, the outfitting point of the Cariboo district was very active. The points of the northern interior, Fort George, Cariboo and Nechacco districts import their supplies through here. From Ashcroft automobiles, stages and wagons leave daily with passengers and freight for Soda creek, the foot of navigation on the upper Fraser river, 165 miles distant. The great rush to the north during the past season threw life into this usually quiet town. Accommodation was scarce, but Ashcroft strove to fulfil its duty to the itinerant throng, and prospered.

Savona, too, was busier this year than it has been since the days of "construction." The lumber mill there worked steadily, supplying material for the buildings and flumes incidental to the development of Walhachin. It is probable that in the near future the flats of the Deadman Creek Indian reserve, between Savona and Walhachin, will be the site of the largest fruit raising colony in British Columbia.

Kamloops increases in size from year to year, and now contains a population of nearly 3,800. The spirit of optimism is here deep rooted, the coming of new railways is looked for with great expectation and realty speculators are busy. There is a good fruit and agriculture area contiguous to the town and its winter climate is one of the best in the Dominion, so optimism is justified.

Three or four years ago the fact that the country is drying up began to grow apparent; ponds that were in existence two years ago are now dry, while the flow of water in the creeks is gradually diminishing. The heavy snow in the hills, upon which the water supply of the district is dependent, does not come as it used to. Unless a change comes soon and the snow falls deeper in the hills the district will be face to face with a serious problem.

In conclusion I wish to state that throughout the season the work progressed smoothly and there was very little time lost. Both the weather and the country in which we were working were favourable to progress.

THREE-MILE CREEK, GUICHON AND MEADOW CREEKS, NISKONLITII
FOREST RESERVE, HIGHLAND VALLEY, LONG LAKE FOREST
RESERVE, TRANQUILLE FOREST RESERVE, ETC.

R. D. McCaw, D.L.S., 1910.

Townships included in the following report:—

Range 16, townships 20, 21, 22; range 17, townships 22, 23; range 18, townships 17, 18, 22, 23; range 19, townships 17, 18, 22; range 20, townships 17, 18; range 21, townships 16, 17, 20, 21; range 22, townships 14, 15, 16, 17; range 23, townships 14, 15, 16, 17, 18; range 24, townships 15, 16, 17, 18; all west 6th Meridian.

SIR,—I have the honour to submit the following report regarding my operations during the past season in connection with the examination of lands in the Kamloops district of British Columbia.

On May 9 I began the necessary preparations for the season's work, and shipped to Savona, B.C., the packhorses and outfit provided for my own party. I left Calgary on May 12 and stopped off at Kamloops to make arrangements for different items, proceeding to Savona on the 14th.

My first camp was located on Three-mile creek, about five miles southeast of Savona, and examination started in the immediate vicinity. In the meantime I had received word that A. V. Chase, of Orillia, Ontario, had been appointed to take charge of a sub-party which I was to have, and I proceeded to get a party and outfit ready to place in his charge.

With this intent I went to Kamloops and engaged a cook and one man, and also procured part of the camp outfit. On May 24 I went to Calgary to ship packhorses. Owing to delays in getting the horses from Logan's ranch and in getting a car for shipping, I was detained until May 31. On the 30th I had shipped the horses and other necessities for the outfit in charge of J. E. Smith, whom I had engaged as packer. I reached Kamloops to find that one man whom I had engaged did not put in an appearance, so engaged another and proceeded to Savona on the morning of June 2, and finding that Smith had arrived with the car, at once proceeded with the outfit to my own camp.

During my absence my assistants took charge of the work which I had laid out for them before my departure, and Mr. Chase arrived in camp on May 30.

Camp was then moved to Tunkwa lake and Mr. Chase was assigned a party and outfit to commence examination in that vicinity, working upon the instructions I had received. I then moved my camp south to the junction of Guichon creek and Meadow creek and commenced examination in that vicinity. I then directed my movements westerly through Highland valley along Witches brook and Pukaist creek to Thompson river. I had made arrangements with Mr. Chase whereby he would conduct the examination in townships 18, ranges 21 and 22, and also north of the correction line between townships 18 and 19 to Thompson river. South of this and as far as Nicola river I examined personally, and visited Mr. Chase's camp on June 24 to see how he was progressing.

On the 30th I moved camp to Spence's Bridge. Owing to there being no road for part of the way from Spatsum to Spence's Bridge on the east side of the river, I was compelled to send the wagons to Spence's Bridge via Ashcroft and the road on the west side of the river. Work was then proceeded with on the north side of Nicola river. Camps were located at convenient intervals along the river. The examination was concluded in this area on July 30.

On Monday, August 1, I started to move towards Long Lake Forest reserve. It took me three days to make the trip and locate a camp. The move was made via Lower Nicola and the Nicola-Savona road along Guichon creek and by a settler's road along Meadow creek into township 17, range 20.

By previous arrangement between Mr. Chase and myself it was agreed that he

should continue the examination between the fifth correction line and the Thompson valley east to the west limit of Mr. Wheeler's examination of 1909, while I continued the work south of that correction line to the said west limit of Mr. Wheeler's examination.

From August 4 until the 31st I was engaged upon examination in townships 17 and 18 in ranges 18, 19 and 20. Camp was moved along a settler's road following Meadow creek to Trout lake, and then along the graded road constructed from Kamloops to Trout lake. During my stay in this vicinity we had a number of rainy days and experienced the coldest weather during the season, the thermometer registering as low as eleven degrees towards the end of the month.

On August 22, in accordance with instructions from me, Mr. Chase met me in Kamloops and I assigned further work for his party in the Monte Hills and Martin Mountain Forest reserves and lands adjoining that were unexamined.

When the work of examination was completed by me in the Long Lake Forest reserve area, I proceeded to the Niskonlith Forest reserve via Kamloops, and commenced work in that vicinity from a camp located in the northeast corner of township 20, range 15. The next main camp was located near Louis lake, and I then moved to the northeast corner of township 21, range 15, locating my camp beside Louis creek on September 27. From this date on rain and snow greatly retarded work in this locality, so much so that I was losing time. Feed for the horses was getting scarce and I could not procure hay from the settlers. Taking these matters into consideration I decided that the work of examination to the north of Niskonlith reserve not already done could not be made at that season, so on October 11 I moved my camp to Kamloops en route to Tranquille Forest reserve, where I knew there was feed for the horses and less wet weather in that locality at this time of the year.

On October 13 I located a camp near a small lake in section 34, township 21, range 18, and commenced work in the Tranquille Forest reserve and vicinity. From this camp work was done north and northeast, closing on my examination of 1909 under the direction of A. O. Wheeler, D.L.S. The last main camp was located at Watching creek near the south limit of Tranquille Forest reserve on October 29. In accordance with instructions given him to join me when he had completed examination in the Monte Hills and Martin Mountain reserve and vicinity, Mr. Chase arrived at my camp on November 9 and assisted me in the remaining work that could be done during the remainder of the season. Snow greatly hindered the work during November and I broke up camp on November 21 as it was becoming impossible to accomplish a full day's work.

I paid off all the men except Mr. Chase and the two packers, and on November 23 shipped a car with horses, pack-saddles, &c., to Calgary in charge of one of the packers. I arrived in Calgary on the evening of the 24th, and the car with the horses arriving on the 26th I sent them out to Logan's ranch in charge of the packers, where I had procured winter quarters for them. The packers were paid off on the 28th upon their return from Logan's.

Many times during the season it was exceedingly difficult to obtain feed for the horses. Pasture was poor and the hay crop a partial failure. Often in order to feed the horses I was compelled to pay high prices for pasture and hay.

In conducting the examination the methods employed were similar to those used by Mr. Wheeler in his previous work of examination.

When the lands examined were situated within surveyed territory the survey lines were traced out and sections traversed in such a manner that an intelligent report could be prepared describing the lands. In unsurveyed territory traverses and approximate production of the township subdivision lines were made to locate the areas reported on.

Traverses used as bases for examination were either run out by compass and chain or with stadia.

Throughout, in examination, lines were dependent on box compasses for direction and pacing for distance, with the assistance of tally-registers. Elevations were referred to sea-level and were determined by means of aneroid barometers carried in the field by the examiners and compared for fluctuation of atmospheric pressure with stationary aneroids in camp which were read every two hours throughout the day. Elevations along the Canadian Pacific railway and other elevations on the Kamloops and Sicamous sheets according to James White, F.R.G.S., Geographer, were used as authority for altitudes. Records of maximum and minimum temperatures were taken throughout the season.

The report of A. V. Chase, D.L.S., who had charge of the sub-party, is annexed.

TUNKWA LAKE, GUICHON CREEK VALLEY, HIGHLAND VALLEY,
BARNES CREEK, ROCHE LAKE, MARTIN MT. FOREST
RESERVE, ETC.

A. V. Chase, D.L.S., Season 1910.

Townships included in the following report:—

Range 16, townships 16, 17; range 18, townships 19, 20; range 19, townships 19, 20; range 20, townships 19, 20, 21; range 21, townships 18, 19; range 22, townships 18, 19, 20; range 23, townships 19, 20, 21; range 24, townships 19, 20; all west of 6th meridian.

SIR,—I have the honour to submit the following report on my operations in examination of land in the Kamloops district during the months of June to November, inclusive, season 1910.

In compliance with the instructions of the Surveyor General to report to you at Savona, B.C., I left Orillia, Ont., on May 25 and reached Savona on May 30. On the arrival there of your packer I proceeded at once with him to your camp on Three-mile creek the same day. As work from that camp was then about completed, I waited for your arrival with my party and outfit on June 2.

After completing the distribution of men, outfits and supplies I moved camp to Tunkwa lake in township 19, range 21, west of the sixth meridian, on June 3, where I commenced work for the season examining lands convenient thereto.

On June 15 I moved camp into Guichon Creek valley to a point near the north-east corner of section 19, township 18, range 21, and examined the lands in and adjacent to this valley, using this as a main camp for most of the work, which was completed from a flying camp in the valley just south of the township.

On June 24 I moved the main camp to a point near Divide lake in Highland valley, leaving one tent and two assistants to complete the work in Guichon creek valley, which they did, and arrived at main camp on the following day. As the country to the north of Highland valley is very high and of little value, only a few days were necessary to examine and describe it, so I was able to complete this part from two other camps in Highland valley and move camp to Spatsum on July 5.

From here work was continued along the bench land on Thompson river and back into the mountains to the east. As there was no feed for the ponies in the eight-mile stretch between Spatsum and Thompson's ranch on lot 95, and no drinking water except at these points and in Thompson river, these places were used as camping grounds for examination of this locality.

On July 15 I moved camp to the north end of Barnes lake and continued examination of lands in the vicinity of Ashcroft and to the southeast, moving up Barnes creek to examine lands to the southeast and adjacent to Glossy mountain, on July 20.

From here work was continued easterly examining undisposed-of lands to the south of Thompson river to close on work done in the vicinity of Savona in the

beginning of the season. This portion was completed and our first camp on Three-mile creek again reached on August 6. Thence work was continued eastward examining lands undisposed of between the fifth correction line and Thompson river, including lands in the Long Lake Forest reserve and timber berths Nos. 420 and 330, and as far east as the lands included in the examination by A. O. Wheeler, in 1909.

On August 21 I left camp en route for Kamloops to meet and confer with you on further work, and having done so, returned and reached camp on the 23rd. This portion of the work was finished on September 13.

On the 14th I moved camp to Bulman's ranch at the north end of Trapp lake en route for the Monte Hills Forest reserve. Some little delay was here experienced, through the difficulty of finding any one who could direct me to convenient trails and none seemed to know the whereabouts of old survey lines, Mr. Bulman being absent from his ranch at the time.

However, on September 16 camp was established in township 17, range 16, near the south end of Roche lake, and work was commenced, the boundaries of the reserve traced out and examination of lands begun.

On account of the sharp and continued rise to eastward and the thick growth of small jackpine through which it was impossible to travel at much greater speed than one-half mile per hour, I found it necessary to cut out a traverse line to use as a base for operations in the interior, there being no lines surveyed within the boundaries in this part. However, on September 27 the traverse line was completed, and on account of the altitude and nature of the country little detailed examination was necessary in this locality and the work was completed in the southwest portion of the reserve on October 3.

On October 4 camp was moved to a point east of Fish lake and north of the reserve. Similar proceedings were necessary here, but great assistance was rendered by J. A. Bleeker, a rancher, who went to much trouble to show us the trails in this part and the lines surveyed in the locality. Examination of the northwest part was completed, and moving to the eastern part of the reserve was commenced on October 18. The wagon, which my packer had brought from your camp, proved of great assistance here as the pack-ponies seemed unable to stand continued long moves for more than three or four days at a time, and it would have been impossible to move our outfit and fresh supply of provisions all at one time on our ponies alone. With the help of the wagon the move to Monte lake was accomplished in three days without any loss of time. Camp was established at the south end of Monte lake on October 20 and examination of the eastern part of the reserve commenced. On account of the altitude and nature of the country here little detailed examination was necessary except in the southeast part, and the whole was completed on October 28. Camp was moved and examination of the Martin Mountain Forest reserve commenced on the east side on October 31, the examination of the same being completed on the west side on November 3.

In accordance with your instructions, I commenced the move to Kamloops on November 4, en route for the Tranquille Forest reserve to join you and assist in the completion of such work as could be done there before the close of the season. I arrived at your main camp on Watching creek on November 9, being delayed one day en route getting supplies for the remainder of the season.

Great trouble was experienced throughout in providing feed for the pack-ponies. In a great many localities grazing was burnt out or eaten off completely. Many settlers did not have enough hay for their own use, and the result was that I was compelled to buy much feed and pay rather high prices at times.

TRANQUILLE FOREST RESERVE, CRISS CREEK VALLEY, DEADMAN
RIVER, PASS VALLEY, EIGHTMILE CREEK, CACHE CREEK,
SCOTTIE CREEK VALLEY, BONAPARTE RIVER,
HAT CREEK VALLEY, ETC.

A. V. Chase, D.L.S., 1911.

Townships included in the following report:—

Range 19, township 23, 24; range 20, township 23, 24; range 21, township 23, 24; range 22, township 21, 23, 24; range 23, township 21, 22, 24; range 24, township 21, 22, 23, 24; range 25, township 22, 23, 24; range 26, township 21, 22, 23; range 27, township 21; all west 6th meridian.

The examination of that portion of the Tranquille forest reserve not done by R. D. McCaw, D.L.S., in 1910, was our first work of the season. This portion of the reserve is very rough and rolling. There is no merchantable timber and except for a few stretches of grazing land it might be considered useless were it not for the fact that the thick growth of small scrub timber, which proves more or less of a snow shelter, prevents too rapid evaporation of the moisture collected there during the winter, and thus acts as a sort of reservoir to regulate the stream flow. It is all over 4,000 feet above sea-level and its highest point is 6,000 feet.

The valley of Tranquille river in township 22 and 23, range 20, west of the sixth meridian was next examined. The surface in the latter township is composed of steeply sloping land and gulches, very rough and useless for agricultural purposes. Some merchantable fir is found in the southwest part of the township, but the grazing has been destroyed by the frequent forest fires, except in a few flats and sloughs.

The land in the valley of Criss creek in township 23, range 21, is all steep and precipitous, and unfit for cultivation of any kind, but some land suitable for growing hay and the hardier vegetables lies along this creek in township 24, range 20. The possibility of growing cereals there is doubtful as frosts occurred very frequently in July.

On the hills east and west of Criss creek there is considerable fir and bull pine of medium size, chiefly in the western part of township 23, but to the north in township 24 and in the higher altitudes this is replaced by smaller timber and scrub with jackpine. Some good grazing land is found in the northwest part of township 23, range 21.

Our next work was the examination of lands along Deadman river and its tributaries north of the sixth correction line. This river flows southwesterly through a valley bounded by steep precipitous hills, showing outcrops of solid rock on the west side and steeply rolling land on the east side. Almost all the good workable bottom-land in this valley is disposed of. Some fir of medium size grows on the slope east of Deadman river, and jackpine grows farther north. There is very little grazing land in this valley.

Rising rapidly from Deadman river toward the west the land reaches an altitude of 4,000 feet above sea-level in about two miles, while the centre of township 23, range 23, is about 5,700 feet. Although large areas of jackpine occur, there is no timber of merchantable value, but some meadows were found in township 23, range 23, and timber grass grows throughout the whole area.

On July 26 I moved camp to Pass valley and commenced the examination of lands in ranges 23 and 24, south of the sixth correction line, and north of Thompson river. Range 23 of this locality is very rough, particularly in the valley of Eightmile creek north of Pass valley. No agricultural land that could be profitably irrigated was found although attempts have evidently been made to bring water from Cache creek into this range, a ditch having been found running from Cache creek, through a small area of workable land in the northwest corner of township 21, and emptying into Tsotin lake which in turn is a reservoir for Eightmile creek. Land in this area

rises rapidly to the north from Pass valley reaching a height of 4,000 feet above sea-level at a distance of from one and one-half to two miles therefrom. To the west of Eightmile creek valley, the land rises to Cache creek hills and towards the east to over 4,000 feet above sea-level in the northwest part of township 21, range 23. The timber of value found in township 22, range 23, consists of an area of fir of medium size in the neighbourhood of Pass valley in the southeast portion of the township. Some grazing land is found in the southern part consisting principally of timber grass of fair quality. Except for the above-mentioned area, all the land is timbered, jackpine and scrub predominating.

Township 21, range 23, is more open, the only timber of note being found on about three square miles of the heights of Cache creek hills to the west of Eightmile creek, and from four to five square miles in the northeasterly part of the township. It consists mostly of fir and bull pine of medium size with jackpine predominating in the higher altitude in the northeast part. The open land in the immediate vicinity of Eightmile creek is rough and rolling and fit only for grazing, as is nearly all of the undisposed-of part of the south half of this township, north of Thompson river. Owing to its low altitude and extreme heat, most of this land has been burned almost bare of grass of any kind.

Moving camp to a point on Cache creek near the north boundary of township 21, on July 29, I continued the examination in range 24, in townships 21 and 22. The former is traversed through the centre from east to west by Semlin valley which lying at an elevation averaging 1,700 feet above sea-level, comprises nearly all the lands of agricultural value in this township, except those along Bonaparte river. That part of the undisposed-of lands in this township south of Semlin valley and east of Bonaparte river is composed almost altogether of high, open, rolling land with light slightly alkaline soil, gravelly in places, in such a position as to present no possibilities of profitable irrigation and is useful only as grazing land. To the west of Bonaparte river the land rises very steeply and the undisposed-of parts are of no agricultural value on account of the excessive cost of irrigating such small workable flats from the only available source of water, Bonaparte river. Undisposed-of lands to the north of Semlin valley are composed almost entirely of high rocky hills, fairly well timbered in the northeasterly part of the township with scrub fir and bull pine of medium size, but they are more open near Cache creek and Semlin valley. These hills give fair grazing on the north slopes. In Semlin valley itself there are some small areas of undisposed-of workable land to the north of the lands already taken up, but as there is not sufficient water supply to irrigate the lands already patented, there is small chance of these other small areas being of any agricultural value. An estimate by a competent engineer was made in the interests of the settlers in this valley of the cost of bringing water from Bonaparte river. He found on account of the small amount of fall per mile in the Bonaparte that it would cost in the neighbourhood of \$80,000, a price considered prohibitive, considering the small additional area that would be served.

In township 22, range 24, the land rises steeply to the north reaching an elevation of 4,000 feet above sea-level at a distance of from one and one-half to two and one-half miles north of the south boundary. The land is very rough with the exception of 4,000 feet above sea-level at a distance of from one and one-half to two and eighty acres of workable land is found. The only timber of value grows along the south boundary and consists of fir and bull pine of medium size, but these quickly give place to jackpine as one goes north. Grazing is poor on the south slopes.

The lands in Scottie creek valley in township 23, range 25, are in general of a steep, precipitous nature, although a small area of workable sandy loam soil was found along the north side of the creek near the east boundary of the township, at an elevation of about 3,000 feet above sea-level. This area could be irrigated and would probably be fit for cereals as it is fairly well sheltered. The land rises rapidly to the

north and south of Scottie creek, and eastward toward the centre of township 23, range 23. About three square miles of ranges 23 and 24 in this watershed and in the neighbourhood of Hi-Hium creek are below 4,000 feet above sea-level, but the remainder is all high land. The only other lands adjacent to Scottie creek of possible agricultural value are along a small branch of Scottie creek in the northeast part of township 23, range 25. Some areas here are of good flat workable land but adequate irrigation does not appear a profitable possibility. East of the centre of range 24 and north of the sixth correction line the land is all timbered with small growth, mostly of jackpine. Recent fires have burned over most of the east half of township 23, range 24, and a small portion of the southeast part of fractional township 24, range 24, destroying most of the small growth as well as some of the larger jackpine. There is considerable fir of medium size to the south of Scottie creek in range 25, and bull pine with stretches of small jackpine to the north. Some very good grazing land exists in this valley.

The valley of the Bonaparte through townships 22 and 23 presents no workable land which is not disposed of with the exception of a small area adjoining the northern boundary of the railway belt. Possibly an area of fifty acres of the west half of section 29 is workable land. Being at the elevation of 1,800 feet above sea-level this is of agricultural value. These townships are chiefly remarkable for the rough, steep nature of the land adjoining the valleys; much outcrop of solid rock shows to the east of the Bonaparte and steeply rolling land lies to the west. In the lower altitudes the land is rather barren of either timber or grass growth, but as the altitude increases east or west, scrub timber appears, changing to bull pine and fir of medium size at an altitude of about 3,500 feet above sea-level. Timber grass is found in fair quantities where the timber grows thickly.

The valley of Maiden creek holds only very little undisposed-of or irrigable land of agricultural value. This is in section 3, township 23, range 26, and is of such small acreage as to be unworthy of attention. Its altitude, about 3,700 feet above sea-level, is such as to exclude anything but hay growing. The slopes on the south side of Maiden creek present a very fair and uniform growth of fir and scattered bull pine, but on the slopes having a southern exposure the timber is more of a scrubby variety. Grazing is also much better on the shaded north slopes than on the more exposed south slopes.

The valley of Hat creek, through township 22, is very rough in those lands not disposed of, rising steeply to the north and south of the creek bottom to over 5,000 feet in the west part of the township and to 5,000 feet in the Trachyte hills in the east part of township 21, range 26. This area shows no agricultural land of sufficient extent to warrant the expense of irrigation, the small areas of workable land being of such location as to make profitable irrigation, considering the area, very impracticable.

The southeasterly slopes to the northwest of Hat creek are very rough and precipitous, especially in the west part of townships 22, ranges 26 and 27. The land is in general timbered, with open stretches near the creek bottom. On account of the amount of rocky country in this locality, the timber is of rather small size and not of merchantable value. The northerly slopes to the southeast of Hat creek are covered with a better class of timber, although in the immediate vicinity of the creek bottom the land is somewhat open as on the north side. No land of agricultural value was discovered in this locality.

On September 19 I proceeded to Lytton to arrange for the commencement of miscellaneous surveys in that district and on September 25, having completed arrangements and procured the additional men for my party, I moved to Canford to commence subdivision work in township 14, range 23. I surveyed the north boundary and east and west centre line of section 11 and ran a small portion of the east boundary of Lower Nicola Indian reserve No. 10 to determine the bearing thereof and tied the east boundary by traverse to the Dominion system. With the exception of

the river-flats of small acreage this locality is rolling; hilly country, timbered with bull pine and fir.

On October 5 I moved to Lytton and proceeded to survey a small portion of the fourth correction line where it crosses Fraser river and a portion of section 35, township 14, range 27, west of Fraser river. I made a traverse of the east bank of Fraser river through sections 26 and 35 of the same township and also of the south bank of Thompson river in township 15, range 26, as far up-stream as could be conveniently done from this camp, and surveyed a portion of the north boundary of section 8.

I next traversed the north side of Thompson river easterly until compelled to abandon this by the blasting operations of the Canadian Northern railway construction. I also surveyed portions of sections 7, 8, 17 and 18 in this township. I found one new settler in section 17, developing a very good bench of about forty acres, but the remainder of the area surveyed is very steeply rolling and of little value except for timber and grazing.

On October 31 I commenced the traverse of Fraser river on the west bank through sections 2, 11, 14 and 27, township 14, range 27, and tied Lytton Indian reserve No. 26 to the Dominion system. I then continued the traverse of Fraser river southerly on the east bank through section 36, township 13, range 27, tying on to what appeared to be the remains of a wooden post, mound and bearing trees on the north boundary of Kanaka Bar Indian reserve No. 2.

Heavy rains and snowstorms becoming prevalent I discontinued work in this locality and with the temperature 7° below zero, moved north with a view to continuing the work on Thompson river traverse and tying in all the unfinished work there, reaching Gladwin on November 11. On account of weather conditions, I discontinued the work after tying in the traverses to section 10, township 15, range 26. I moved in to Lytton on November 16 and after shipping my outfit to Kamloops, disbanded the party.

KAMLOOPS DISTRICT,—TOWNSHIP 16, RANGES 16 AND 17, AND TOWNSHIP 23, RANGE 18, WEST 6TH MERIDIAN.

C. H. Taggart, D.L.S., Season 1911.

My first work was establishing the north limit of the Monte Hills forest reserve. The route to this work was along the road from Kamloops to "grand prairie" for twelve miles. From there a branch road to Campbell lake was followed, and then a rough wagon road to Wolf lake. From there to where the north boundary of the reserve crosses the summit of the hills, there being no road, a pack-trail had to be cut out.

The surface of the country along this boundary is very rough and is densely wooded with jackpine from three to fifteen inches in diameter, and scattered spruce up to forty inches. The soil is a sandy loam with gravel subsoil, and in some places the rock is found close to the surface, while in others it is solid rock outcrops.

The south limit of the railway belt in township 16, ranges 15 and 16, was our next work. To reach this we had to return over our old route to Campbell lake, and then proceed via Barnhartvale and Napier lake. The road between these two places follows a narrow valley the bottom lands of which produce hay and alfalfa in large quantities, and while cattle-raising was formerly the chief industry, fruit growing is now obtaining prominence. At the foot of Trapp lake a large portion of land is being divided into fruit farms of ten and twenty acres each and an extensive irrigation system is to be installed.

In township 16, ranges 16 and 17, some good grazing land was noticed, but easterly from section 21, in range 16, the country becomes rough and rocky, and difficulty was experienced in getting a road for the pack-horses. As our next work lay in township

17, range 13, we cut out a pack-trail to the wagon road along Salmon river. The district around "grand prairie" in this township is being subdivided into fruit farms, and the water of Salmon river is to be used for irrigation purposes.

We next proceeded to timber berth No. 550 on Kingfisher creek, in township 20, range 6, which was our next work. A good wagon road took us as far as Enderby on the Okanagan branch of the Canadian Pacific railway. From Enderby to the mouth of Kingfisher creek the road was rough and from there on we were forced to follow the creek bed through water waist deep and very swift.

The survey of timber berth No. 545 in township 23, range 18, west of the fifth meridian was our next work, and having completed this on August 17 we began subdivision in section 12, township 24, range 19. In this valley, from Golden south to the limit of the railway belt, there is a rich agricultural district, but the best land is included in timber berths, and although the timber is cut off very little improvement has been made as titles cannot be obtained by the squatters, some of whom have lived there for ten years. Wherever development has taken place the results obtained have been excellent, especially with the small varieties of fruit. The bench lands as well as the bottom-lands are being taken up, and though the former may require irrigating an abundant supply of water is available from the mountain streams. Good roads lead through the valley and steamers ply on the river.

We completed the work in this valley on September 30 and left for Revelstoke to perform some surveys in township 23, range 2, west of the sixth meridian. This was completed on October 26, and from then until November 28, we were engaged in traversing the right bank of Columbia river in township 22, range 2, and township 21, range 1, retracing section lines in the same townships and also performing a small amount of traverse in township 21, range 1, west of the sixth meridian, and in township 21, range 29, west of the fifth meridian. During the progress of this work we experienced a three days' blizzard followed by a three days' sleet and rain-storm which greatly retarded our progress.

The lower Columbia valley south of Revelstoke averages about one and a half mile in width. It is mostly covered with a dense growth of under brush and is timbered with cedar from four to twelve feet in diameter. Some hemlock of good size was also noticed but cedar is the chief asset. The soil is mostly a sandy loam with gravelly subsoil, and so porous that irrigation is necessary. Fruit growing here is only in the experimental stage yet, but good crops of vegetables grow wherever the land has been developed, and a convenient and ready market is found in Revelstoke.

The work in the vicinity of Revelstoke being finished we moved to Kamloops to survey the south limit of the railway belt westerly from the southeast corner of section 25, township 17, range 16, west of the sixth meridian, and also to perform some retracement and resurvey in the same district.

From here we moved to Trout lake in township 17, range 19, west of the sixth meridian, to make a traverse of the lake, establish section corners and lay out building lots for summer cottages. The lake is in the centre of the Long Lake forest reserve, twenty-one miles from Kamloops, and is accessible by a wagon and automobile road. It is the only convenient summer resort for Kamloops, and being twenty-nine hundred feet higher than the city the air is always fresh even in the hottest weather.

Our last work was the survey of a parcel of land in township 22, range 17, west of the sixth meridian, in the valley of North Thompson river. The Canadian Northern Railway Company are making rapid progress with the construction of their line on the east side of the river, and it is expected that this portion of the road will be in operation within two years.

EAST OF NORTH THOMPSON RIVER, KAMLOOPS INDIAN RESERVE.
HEFFLEY CREEK, LOUIS CREEK VALLEY, CAHILTY CREEK,
FADEAR AND CICERO CREEK VALLEYS, BACK
VALLEY, ETC.

Report by C. H. Taggart, D.L.S., Season 1912.

SIR,—I have the honour to submit the following general report of my survey operations in the Kamloops district, in the railway belt, British Columbia, for the season 1912.

As soon as possible after the receipt of my instructions, I left for Kamloops, the point of organization, arriving there on Sunday, April 28.

Kamloops is a flourishing town of about 5,000 inhabitants, beautifully situated at the confluence of the North and South Thompson rivers, and is termed the "Inland capital of British Columbia." The surrounding country is known as the "dry belt," owing to the small amount of precipitation. Its elevation is 1,160 feet above sea-level, and the climate is very dry and invigorating, making it a pre-eminently desirable resort, especially for those suffering from pulmonary troubles.

The city had its start around a Hudson's Bay company's post, about one hundred years ago, and during the past summer celebrated its centenary in a most fitting manner. Many demonstrations of the old days were seen, which, when compared with to-day, show the development. This place is a divisional point for the Canadian Pacific railway, and in the near future the Canadian Northern Pacific railway line will be in operation, when it is expected that besides being a divisional point for this road, large railway shops will be erected, which will be a great boon to the city. The latter company also intend building a branch line, starting from Kamloops, to penetrate the rich and fertile Okanagan valley. The survey for it was made during the past summer.

The country around Kamloops is generally mountainous, with fertile valleys. The principal crop grown is hay and grain, which is used as feed for the great numbers of cattle and horses for which the district is noted. This industry is to some extent on the decline, and many of the larger ranches are being divided into small holdings, and extensive irrigation systems installed, for the exclusive growing of fruit.

Two fine bridges cross Thompson river; the one to the west of the town gives access to the country west of North Thompson river, and the one to the east joins the city to roads leading into the country east of the river.

The organization of my party was completed on the night of April 30, and on the morning of May 1, I left Kamloops for my first work, the subdivision of the unsurveyed portion of township 21, range 17, west of the sixth meridian, lying east of North Thompson river, and north and adjacent to the Kamloops Indian reserve.

Leaving Kamloops by the new east-end bridge, we entered the reservation for the Kamloops Indians. This large reserve, which extends easterly along South Thompson river for seven or eight miles and northerly along North Thompson river for the same distance, contains a large area of the best agricultural land in the district. Unlike many patches of good land which are of little value, this area has, in Paul creek, an abundance of good water available for irrigation purposes. The striking feature is that very little of the water or the land is being made any use of by the Indians, whereas if the same were in the hands of thrifty ranchers great crops would be raised. Here also is to be found some fine grazing land.

The Government wagon and automobile road crosses the Indian reserve boundary into township 21, range 17, close to the river bank, whence it follows the foot of the hills. Between the river and the road is to be seen the new grade of the Canadian Northern Pacific railway, and bordering this are some fine ranches. The first of these is the Longburn ranch, owned by W. R. Austin. This ranch is of considerable size and produces fine crops of hay, grain and fruit.

The greater part of the land subdivided in this township is about fifteen hundred feet above Thompson river. The lands comprising the southwest quarter of section 36, the north half of section 26, the north half and the southwest quarter of section 27, and the southeast quarter of section 28, lie on the lower slope of the rise which forms the remainder of this township. This land is best suited for irrigation purposes in connection with some of the large ranches lying along North Thompson river. The water if brought down from Heffley lakes in township 22, range 16, could be kept well up on the slope at sufficient elevation for distribution over any of the lands on the east side of the river in sections 33, 28, 21 and 20 of township 21, range 17.

The remainder of the land is mostly open, or openly timbered, and has previously been used as range land, for which it is well suited. If sufficient water for irrigation were procurable, some portions of this land would be productive of good crops, but this essential is lacking. However, it is quite possible that the dry farming method would be successful.

In travelling along the road to our next work, in township 22, range 17, the first place of interest was the Anderson ranch, which is a very extensive one producing fine crops of hay, grain, vegetables and small fruit, and raising many head of cattle and horses. I understand that on both the Longburn and Anderson ranches extensive plans are being made for irrigation systems to bring water from Heffley lakes.

Next we passed the Edwards ranch, belonging to Mr. W. R. Austin. The chief product of this ranch is hay and grain, of which excellent crops were seen; vegetables and small fruits are also grown. The ranch is very large and extends to Heffley creek, the waters of which are carried by a system of good ditches and distributed over the land. On this ranch, near the confluence of Heffley creek and North Thompson river, and along the wagon road is to be found a first-class general store, post-office, hall, church and temperance hotel, all the property of Mr. Austin. Here our second camp was erected.

Last October, at Heffley Creek village, a fall fair was held in which great interest was manifested. Products of the lands on North Thompson river and its tributaries were exhibited, and an excellent showing was made, which demonstrates the great possibilities of the district.

The land surveyed in this township is mostly rough and rolling and is timbered with fir and pine. In years past cattle have ranged over it, for which purposes it is best adapted. There are some small patches of land which, with irrigation, would be quite productive of hay, grain and perhaps small fruit. Irrigation might be possible by the construction of a long ditch leading from Heffley creek two or three miles farther up stream, but this is impracticable, as the cost would be too great for the amount of land to be watered.

North Thompson river flows through one of the principal valleys of the district, and extends for 200 miles northward, having extensive fertile areas along its banks for a considerable distance, and at present a good wagon and automobile road traverses it. In the near future, however, the Canadian Northern Pacific railway, which is now being rapidly rushed to completion, will be in operation, and will do much to develop the large country it passes through.

Our next work took us along Heffley creek to its source, the Heffley lakes, where subdivision of lands suitable for agriculture in township 22, range 16, was made. These lands are at a considerable elevation, but judging from the excellent showing of the other ranches along Heffley and Edwards creeks, good crops of hay should be possible. In sections 9 and 22 splendid crops of hay and grain were seen, while vegetables of high order are grown. Some good range land is also to be found.

Heffley creek is a stream from fifteen to twenty-five feet in width and from six inches to two feet deep. It takes its rise in a lake of the same name, at an elevation of about 3,300 feet, and in its descent to North Thompson river falls at the rate of about 200 feet to the mile. It has a maximum flow of about 100 second-feet. Heffley lake is about two miles in length and several hundred yards wide. It affords an

excellent storage reservoir for the freshet waters. The water users have co-operated in building a small dam at the lake outlet, but this is quite inadequate; the storage capacity of the lake could be greatly increased, and no water need be wasted. I made some rough measurements, and from these it appears that the lake water could be raised from two and a half to three feet above the present dam without seriously affecting any other interests. It is probable that on the upper reaches of the creek and at Heffley lake the precipitation is about twenty-five inches. The rainfall at the mouth is between eight and twelve inches, with a very light snowfall.

Heffley creek, like most of the streams in the dry belt, is vastly over recorded, but at the same time, with judicious handling there is enough water for all users. The storage, as has been pointed out, is not at its highest efficiency, and the methods used by most of the irrigators are very primitive. Much water is lost through seepage, and this could be obviated by individual irrigation works.

The most tedious and arduous piece of work of the season was the delimitation of the boundary of the railway belt across townships 23 and 24, range 15, and township 24, range 14. In most places this boundary runs over rough mountainous country, thickly wooded, and in some places the ground was covered with a thick layer of wind-fall. This is bad at any time, but at the time of survey, when much rain fell, it was very slippery, which made the travelling extra difficult.

Crossing the summit of the high range of mountains from Edwards creek and Kenuff Lake valley, a steep descent leads down to the Louis Creek valley about twenty-two hundred feet below. This valley is of an average width of about three-quarters of a mile, and in it some fine bottom land is to be found along Louis creek, with some good benches lying nearer the mountains. Nearly all this land has been taken up, and good crops of hay, grain and small fruit are raised. The raising of fruit has not as yet been gone into to any extent, but from the results of some of the small patches seen it is evident that the growing of the small varieties would be very successful. A great drawback to the rapid development of the fruit-growing industry is the distance from any market. The ranchers here, therefore, produce such crops as can be fed to cattle, sheep, etc.

The main tributaries to Louis creek are McGillivray and Cahilty creeks. On McGillivray creek a saw-mill is in operation, the water of the creek being used for power. It is possible that a much larger power could be developed.

Cahilty creek, the main tributary of Louis creek, is a torrential mountain stream rising in the highest hills of the Louis Creek drainage area, and discharging into Louis creek at an elevation of about 2,000 feet; its waters are used during the summer months for irrigation purposes. The supply is more than enough for all possible users, its maximum flow being about 400 second-feet. The water could be used to good advantage for power. Cahilty lake, about six miles from the mouth, affords excellent storage for the spring freshet. A narrow canyon through which the creek flows at the outlet of the lake could easily be dammed and a mean flow of from 25 to 35 second-feet procured.

I am indebted to the Hydrographic Survey Department, under the supervision of Mr. P. A. Carson, D.L.S., for the information regarding flow and record of Heffley and Cahilty creek.

In conjunction with the survey of the limit of the railway belt, all lands suitable for settlement in the valleys of Fadear and Cicero creek, in township 24, range 15, and townships 23 and 24, range 14, were surveyed.

The completion of the survey of the belt limit brought us down to the Adams lake valley, about three and a half miles from the landing on Agate bay. Lying along Pass creek some good agricultural land is to be found. Squatters are located on most of it, but they cannot get entry owing to the fact that all the unoccupied land within the railway belt in this valley is a timber berth. In this valley, in section 1, township 25, range 14, a small survey was made to tie in the Homestake group of mineral

claims. These claims are not in operation, for the reason that the copper ore is not of sufficiently high quality to warrant the excessive cost of transportation to the railway.

A good wagon road has recently been constructed, branching off the Louis creek road at Blucher Hall post-office, and after following the Adams lake valley, terminates at the landing on Agate bay. Good crops of hay and grain were seen, and the yield of potatoes, etc., was fine.

Our next work was in what is known as the Back valley, township 20, range 15, and to reach it we were obliged to return to Kamloops, where we arrived at noon on October 23. After stocking up with supplies and getting the outfit in condition for winter weather, we left Kamloops at noon on the following day, taking the wagon road following South Thompson river for five or six miles to where it branches, leading into the Harper ranch. This is an old and extensive ranch, and is considered one of the best in the district. The land is very productive of hay, grain and vegetables, and a considerable amount of fruit of good quality was seen. At one time as many as three thousand head of cattle were handled on this ranch, but to-day from nine hundred to one thousand is the greatest number that can be successfully cared for, owing to the fact that the range land is being more and more cut off as the country is settled, and is not as productive of bunch grass, owing to many years of grazing, and also during the past few years the winter seasons have been more severe and the snowfall greater, necessitating the feeding of the stock for a much longer period. An average of about one ton of fodder per head is required to winter stock successfully. In the winter of 1911-12 feeding had to be started in November, whereas in an ordinary year previously, feeding was seldom started before January 1, and sometimes not before the 15th.

These statements may also be applied to the whole district.

From the Harper ranch to Pinantan lake the road rises rapidly and crosses the high range of hills forming the north limit of the South Thompson valley. On the north shore of Pinantan lake the first ranch in the Back valley is seen, and following this lake easterly, and along Paul creek, numerous ranches are located. Good crops of hay and grain were seen, for the maturing of which no irrigation was used.

A much better route for reaching this valley is now available. A new wagon road which has been completed this winter branches off the North river road at the crossing of Paul creek, and following the creek passes close to Paul lake and enters township 20, range 15 in section 31. The road then follows along the creek from the lake to near the west end of Pinantan lake, where it connects with the old road. This route is preferable, as there are no steep grades like those on the old road.

The work in this township consisted in the establishment of the north boundary of the township as far as the northeast corner of section 31, and running the meridional section lines to monuments established by previous surveys. The lands surveyed are mostly high and rolling, openly timbered with fir and pine, and a thick growth of underbrush. They cannot be said to be farming lands, although some small patches of good land are to be found. The district is best suited for ranching. North of the north boundary of this township is the Niskonlith forest reserve.

Having completed the survey in township 20, range 15, we moved camp to Trapp lake, township 17, range 17, where we arrived on November 9, and proceeded to subdivide a tract of range land in the eastern portion of the township. We also traversed Trapp lake, and resurveyed fishing stations numbers two and three for the Kamloops Indians. The land subdivided is mostly open and rolling, and ordinarily is not productive of any kind of crop, owing to the lack of water. In my report of 1911 can be found a detailed report of this valley.

Having completed work in this township on November 20, we moved to township 18, range 18, where a portion of the township lying east of the Long Lake forest reserve was subdivided. This was completed on December 15, and on the following day we again arrived in Kamloops, where we took train for Chase, a small thriving town

situated on the Canadian Pacific railway, at the outlet of Little Shuswap lake in township 21, range 13, west of the sixth meridian.

This town possesses a large saw-mill, fitted with the most modern machinery, and operated by the Adams River Lumber Company, and on all sides can be seen the results of a progressive lumber industry. There is also a splendidly appointed hotel, which is not surpassed in towns many times the size of this one. During the summer months many tourists and commercial men make it a point to arrive in Chase to spend Sunday. Boating and excellent fishing are to had on the lake.

My instructions called for the establishment of the east boundaries of section 25 and the south half of section 36, and the north boundary of section 25. This work proved to be difficult, owing to the fact that the lines ran over a very steep rocky mountain, which was blanketed with snow several inches deep, making it slippery and dangerous.

Having completed this piece of work I decided to suspend operations owing to the lateness of the season, and the coming of severe weather. I accordingly returned to Kamloops on Saturday, December 21, paid off the party, and on the 23rd stored the outfit for the winter. On the 26th, having closed up all business in connection with the season's operations, I left for Ottawa, where I arrived on December 31,

The weather conditions throughout the season were much out of the ordinary, and most unfavourable for survey operations owing to excessive rains during the months of June, July, August and September. No real warm weather was experienced. At the outset of the season things looked very bright for the farmer, especially those who are not so fortunate as to have plenty of water for irrigation. Good crops could easily be raised on any land, which in an ordinary year would be baked and cracked from lack of water and from the extreme warm weather, making growth impossible. When the crops of hay and grain, which were excellent throughout the district, were ready for harvest and the rains continued, great disappointment was felt, and tons of hay and grain were ruined before it was got into the stack.

In speaking with one man, who has been ranching in the district for the past forty years, he said:—

Had any one asked me some years ago if we would ever receive too much rain in the dry belt, I would have said, emphatically, "No," but I will admit I would have been wrong, for this year we have had far too much. If in every year we were to receive but half the amount that fell this summer, all the bottom and bench lands would produce good crops, and without irrigation. I have put in a crop on my ranch annually for the past thirty-seven years, and have never seen as much rain. The climate is certainly changing.

Two heavy cloud bursts were experienced during the summer, and many heavy thunderstorms. During one of theses, which occurred after all hands had rolled in for the night, we were awakened by the falling of a thirty-inch fir tree, which fell parallel to three tents in which five men were asleep; had it come but ten feet to the right all five certainly would have been killed.

THOMPSON AND NICOLA RIVER VALLEYS, STEIN RIVER VALLEY, ETC. *Report by J. A. Calder, D.L.S., Season 1912.*

SIR,—I have the honour to submit the following general report on my surveys in the railway belt of British Columbia, during the season of 1913.

After a few days devoted to getting my party and outfit together, I left Kamloops on June 7, and began the season's operations by making surveys required in the neighbourhood of Spence Bridge.

Land in townships 16 and 17, ranges 24 and 25, were subdivided, and several Indian reserves and provincial lots tied in to the Dominion Lands system. Parts of

the Thompson and Nicola rivers were traversed; the left bank of the former through township 16, range 25, was connected to such of the old survey monuments near the river as could be found, and these monuments were restored. Considerable difficulty was experienced in locating old corners, and many of the earlier survey monuments in the vicinity are lost.

The country in the neighbourhood of Spence Bridge appears to be particularly favourable to the production of fruit. Nearly all the varieties are grown with great success, as well as the ordinary field crops. This district, being in the "dry belt," requires irrigation, and frequently patches of good land lie unworked owing to the difficulty and prohibitive cost of getting water. Any ground in the dry belt, if not too elevated or physically unsuitable will, with water, unfailingly yield crops of all kinds in remarkable quantities and quality. In future, therefore, as land in general becomes scarcer and dearer, water will doubtless be brought to most of the lands which now lie idle for want of it.

On July 20, I moved to Canford, about twenty-eight miles up Nicola river, where I made some subdivision surveys and tied in a couple of Indian reserves.

The cultivable land in this district is well adapted for mixed farming, the elevation being about eight hundred feet higher than at Spence Bridge. I should judge that the more delicate varieties of fruit might not be a safe crop. In confirmation of this view I observed slight frosts early in August. The country generally, save for flats along Nicola river, is hilly and much of it is covered with fair timber, principally pine and fir. A saw-mill has been built on Spius creek, a couple of miles from Canford station, affording employment and a market for timber to many of the settlers.

A great deal of the best land along the Nicola valley is included in Indian reserves, and very little of it is cultivated. This is a condition general to the country, and it seems a great pity that where good land is so scarce so much of it is thus permanently idle.

From Canford I proceeded to Stein river to subdivide lands along its valley. This river flows from the west into the Fraser at a point about four miles above the town of Lytton. I found that for eight miles of its course the river flowed through a narrow precipitous canyon, so rough as to make it impracticable to carry on subdivision in the regular way. I accordingly located the section lines from a traverse run along the right bank of the river as far as the north boundary of section 28, township 15, range 28. Every north and south section line intersected was marked on the ground. The traverse was carefully checked by another independent traverse. From this point the canyon broadens into a valley which I subdivided for settlement as far as the centre of section 33, township 15, range 28.

In this valley, from about the east boundary of section 32, township 15, range 28, there is a narrow strip of good agricultural land as far as subdivided. This bottom land rarely exceeds a quarter of a mile in width, and is encroached upon in many places by ridges of rock debris. The sides of the valley rise abruptly in a series of rock slides and unscalable cliffs. The low land along the river is covered with a dense jungle of red willow and other brush, interspersed with cottonwood of fair size, and occasional groves of cedar. The difficulty of opening survey lines through such profuse vegetation seriously hindered the progress of the work. The soil is generally a light sandy loam. The valley at this point is about 1,900 feet above sea-level, and appears to be free from summer frosts, the first observed being on September 19.

Owing to the thickness of the brush, it was almost impossible to see or to hunt any large game, although it was a common experience to hear a startled bear or deer crackling through the underbrush, and their tracks were everywhere abundant.

There is no trail passable for horses up Stein river, the chief obstructions being several slides formed by huge irregular masses of rock. The only present means of access to the valley by pack train is a long circuitous trail which leaves the Fraser at a point nearly twenty miles above the mouth of Stein river, and after three days'

travel, leads into Stein valley in section 33, township 15, range 29, and continues up the valley for some distance. This trail can be used only for a few months in the summer as it passes over high mountain ranges and becomes blocked by snow early in the fall. It would be a costly undertaking to build a wagon road through the canyon, but a fair pack trail can be made at a reasonable expense. A road or trail of some sort must be built before settlement in the valley is practicable. The river, however, is navigable by canoes, and a road is not so immediately essential in the valley proper.

Stein river presents excellent facilities for the development of water-power. For about nine miles it is a continuous series of rapids, the fall averaging about one hundred and fifty feet per mile. An immense volume of water is discharged, but the quantity varies a great deal according to the season.

Having exhausted my supplies, I was obliged to discontinue my surveys in the valley on October 17, arriving in Lytton on the 19th.

I next made some surveys in township 15, range 26, including the traverse of both banks of Thompson river, through the east half of the township. There is but little land of value along the river in this township, as the country generally is very rocky and broken. Upon some small spots fruit is grown successfully. There are good flats on Botanie creek at an elevation of about 1,200 feet above the Thompson. The soil is a clay loam of good quality.

On November 13 I moved to Walhachin, where I was engaged until December 14 in subdividing lands in that vicinity, suitable for settlement.

There are considerable stretches of elevated open country to the south of the town, forming excellent range land. Most of it is hilly and broken up by gulches. The soil is generally a dark clay loam of fair quality, and some of the land could be tilled profitably were water for irrigation available. The greater portion of the good farming land in the immediate neighbourhood of Walhachin is controlled by English capital, much of which has been invested in the construction of reservoirs and flumes to store and convey the water for irrigation. The greater part of their water supply is obtained from Deadman river, which flows into the Thompson a few miles east of the town. Considerable areas have been planted with fruit trees, which are as yet too young to bear. The young orchards are all thriving, and give promise of abundant returns in the near future.

I finished the season's work by tying in a small Indian reserve in township 19, range 25, and on December 20, I arrived at Kamloops, where I stored my outfit and disbanded the party.

The season was very favourable, and little time was lost on account of bad weather. The fall was unusually mild and open.

VALLEY OF HAT CREEK AND ITS TRIBUTARIES, VENABLES VALLEY, MURRAY CREEK VALLEY, BOTANIE CREEK VALLEY, SPIUS CREEK AND NICOLA RIVER VALLEYS, ETC.

A. V. Chase, D.L.S., Season 1912.

Townships included in the following report:—

Range 23, townships 11, 12, 13, 14, 15; range 24, townships 15, 16, 18, 19; range 25, townships 15, 16, 17, 18, 19, 20; range 26, townships 11, 12, 13, 15, 16, 17, 19, 20, 21; range 27, townships 13, 14, 15, 16, 17, 18, 19, 20, 21; range 28, townships 17, 18; all west of sixth meridian.

SIR,—I have the honour to submit the following report on the examination of lands in Kamloops district, British Columbia, during the season of 1912.

I left Orillia on May 18 and proceeded at once to Kamloops where I collected my outfit. On May 27 I sent my pack train overland, and proceeded myself by train to Ashcroft, where I assembled my party and then moved north via the Cariboo road as far as Bonaparte Indian reserve No. 3. Leaving the wagon road there I moved southwesterly by pack trail to camp near the south end of McLean lake in township 21, range 25, west of the sixth meridian, where I commenced work for the season.

Township 21, range 25, is chiefly remarkable for its great area of excellent grazing land, the value of the merchantable timber being secondary, and agricultural land being entirely absent. Nearly the whole northern part of the township is good grazing land, part of it being quite open and part of it covered with open timber and poplar groves. The eastern and southeastern part of the township is mountainous, and is covered with scattered pine and fir, some of which on the northern slopes in the northeast quarter of the township is of merchantable size and quantity. In general, the eastern part, however, is rolling, hilly land, the chief value of which is for grazing purposes.

The southwestern part of the township is all timbered land, rising steeply to the southwest. The timber is fir and pine, and in some places it is of merchantable size and quantity.

On June 6 I moved camp westward from McLean lake into ranges 26 and 27 and commenced the examination of the valley of Hat creek and its branches. The work was continued south to within a short distance of the south boundary of township 19. As elevations of over 4,000 feet above sea-level were encountered there in the main valley, I decided to cease operations in that locality.

This area, comprising parts of townships 19, 20 and 21, ranges 26 and 27, appears to be an ideal stretch of country for the raising of cattle and horses. To the east and west of the main creek bottom lie excellent grazing lands to the extent of seventy-five square miles and upwards, and the main creek valley contains much excellent bottom land fit for hay growing. This bottom land is not open for settlement, being already settled and cultivated, but it is mentioned here to show the possibilities of the valley as a whole. South of the south boundary of township 21 fruit growing is not a success, but potatoes were found doing fairly well in the north part of township 19, at an elevation of about 3,700 feet above sea-level. This is an instance of how favourable local conditions may be for agricultural development, in spite of considerable altitude.

The amount of land fit for agricultural development in this valley, and still open for settlement, is extremely small. There is some land in the neighbourhood of the northeast corner of township 20, range 27, consisting of good workable soil, and at an elevation suitable for potatoes and the hardier vegetables, but an elaborate scheme of irrigation would be necessary to water it. Small areas of workable land are also found in the eastern parts of townships 20 and 21, in range 27, and in township 21, range 26, all of which require irrigation. For any lands lying to the west of Hat creek there is an abundance of water for irrigation purposes, the streams flowing eastward out of the Clear mountains, in range 27, having generally a good flow of water. Lands to the east of Hat creek, however, would have to be irrigated from that stream as the small supply of water from creeks flowing westward through range 26 is all being used at present.

Timbered lands comprise most of the east halves of townships 20 and 21, in range 26, and all of townships 20 and 21, in range 27, except a strip of land from one to two miles wide adjoining the east boundaries in range 27, and extending as far north as the centre of township 21, which is fairly open within the area examined. The northwest quarter of township 19, range 26, contains a couple of square miles of fairly open land, but otherwise the township is timbered throughout. No stretches of timber of such quantity and quality as to be notably valuable for lumbering purposes were noted in this valley. Bull pine and fir are most in evidence, and many areas were noted where trees 24 inches in diameter on the stump are fairly plentiful, but

either the locality or the quantity is generally unfavourable to profitable lumbering operations. Speaking generally, the purpose to which the lands in Hat Creek valley are best adapted is stock raising.

On June 25, I moved eastward through township 19, in ranges 26 and 25, to a point in section 22, township 19, range 25, and proceeded to examine the lands adjacent to this camp in range 25.

The only agricultural land noticed in the west half of township 19, range 25, consists of about forty acres in the valley of Oregon Jack creek about three-quarters of a mile from the west boundary of the township. This area is good bottom land fit for hay-growing, but it is very difficult of access. The remainder of the west half of the township is steep, rocky, timbered mountains. The east portion of the township is a rolling hilly country and is more or less timbered throughout those lands still undisposed of, the timber which is chiefly bull pine and fir, becoming open and scattered toward the east of the township. There is very little valuable land left unsettled, except a small flat area consisting of light sandy loam soil in the eastern part of the township, but this would need abundant irrigation for cultivation.

The undisposed of land in township 20, range 25, is nearly all timbered country on the slopes of the Cornwall hills. A small area, which offers fair grazing and which is partly covered with scattered bull pine, rises to the north from the valley of Cornwall creek. The small portion of township 19, range 24, lying west of Thompson river, contains two areas of good bench land fit for fruit growing, one in section 18 and one in section 31. The remainder of the lands in this township open for settlement are of value for grazing purposes only.

On July 1, I moved into Venables valley in township 18, range 25, and on the 6th into Twaal valley in the same township, examining lands from Thompson river westerly.

The Crown Grant lots and the Indian reserves in these valleys were evidently laid out with care to include all the agricultural land possible. The result is that, with the exception of a couple of small triangular areas in the angles of the lot boundaries, no agricultural land remains undisposed of, and the only valuable parts left are grazing and timber lands. The heights between the two valleys offer a considerable area of good grazing land, particularly on the slopes adjacent to Twaal creek, and a good class of scattered fir and pine is found on the upper slopes and on the lands adjoining the creek in the northern part of the township. West of Twaal creek are found two areas of fir timber of merchantable size and quantity, in all about two square miles in extent, the remainder of the hills being covered with a small and scrubby variety of timber in the northern part and old burn in the southern part. The lands adjoining Thompson river are generally open and very rough. A small flat bench of gravelly soil was found in the extreme northwest part of township 18, range 25, extending into township 18, range 26, but otherwise the only land of value is grazing land. The timber on the heights west of Venables valley is small and scattered. This valley is served by a good wagon road, but Twaal valley is accessible only by pack trail.

On July 10, I moved camp to Spence Bridge, and continued the examination of lands in township 17, range 25, and in the northern parts of townships 16, ranges 24 and 25.

The most of the land in township 17, range 25, consists of steep, rocky mountains, there being two summits in the western part rising to an elevation of over 5,000 feet above sea-level. The valley of Murray creek is a steep rocky gulch which widens out to an area of gently sloping land about the west boundary of the township, but this area is so difficult of access that it is of small value. Somewhat over 100 acres of good bench land was found adjoining Murray creek in sections 10, 15 and 16, at an average elevation of 2,000 feet above sea-level. This, with small acreages in sections 4, 26 and 34, makes up the agricultural land still open for settlement in this township. These lands are accessible at present by pack trail only. The areas adjoining Thompson river, both in the westerly and southerly parts, are open and semi-open lands, of use for grazing only.

Townships 16, ranges 25 and 24, west of Nicola river, are composed mainly of a range of hills the summit of which is like the Nicoamen plateau. Lands west of Thompson river in this township are all steep rocky side-hills, timbered with small and scattered fir and pine. The Nicoamen plateau proper is a rolling summit to which the land rises from Nicola river on the east and from Thompson river on the west. A number of small benches were noted on the slope adjoining Nicola river, and similarly on the slope facing Thompson river is found an area of about 200 acres of bench land, consisting of sandy loam and dark loam soils. Much of this land is at an altitude similar to that of the Rose hill district, and should prove productive under dry culture, while 75 or 100 acres of it are somewhat lower and would require irrigation. The lands in the lower levels near the rivers are fairly open, and offer good grazing areas on their north slopes. At an altitude of 2,000 feet above sea-level timber begins to be in evidence, and the summit is fairly well covered with fir and pine of medium size.

On July 17, I moved camp from Spence Bridge westerly through townships 16 in ranges 25 and 26, and camped at the south end of Botanie lake in township 16, range 26, from which point I examined lands to the south and north in townships 16 and 17.

The chief resource of township 17, range 26, is a large area of excellent grazing land. Botanie Indian reserve No. 15 was evidently laid out with the intention of including all the valuable land in the main valley, but there is still some good grazing land east of the reserve, particularly in the south centre of the township. The land in the north centre and the northeast part is extremely rough, and in general timbered. It was not examined in detail. The northwest part immediately north of the reserve is also very rough, except for a small jackpine flat of no agricultural value.

Coming southward into township 16, range 26, little land of value is found, nearly three-quarters of the area of the township being composed of rocky mountains. The valley of Botanie creek, running from north to south through the western part of the township, is very narrow and steep, and only near the south boundary is any land found fit for agricultural purposes, and this does not exceed 100 acres. This land is found to be very sandy, and the adjoining land under cultivation requires an abundance of water for irrigation. Very little valuable land is found on the hills to the east and west of the valley. A strip of timbered land about one-quarter of a mile wide follows the creek bottom, and contains a quantity of pine, fir, hemlock and spruce fit for ties.

The importance of Botanie lake as a reservoir for irrigation purposes should be noticed here. In the spring of the year a great flow of water goes to waste through Botanie creek to the south, and Skoonka creek to the east, leaving the normal flow of the summer season much below what could be utilized for lands in Botanie creek valley and along Fraser river in township 15, range 27. By means of a dam at the south end of Botanie lake and a creek diversion to bring the waters at present draining east through Skoonka creek into the lake, a supply could be obtained sufficient to irrigate all the agricultural land in these areas.

On July 23, I moved camp south into township 15, range 26, and continued examination of the lands in that township north of Thompson river and in township 15, range 27, east of Fraser river.

A great part of township 15, range 26, is composed of the rough rocky hills of the Scarp mountains. The valley of Botanie creek, in which lies practically all of the agricultural land north of Thompson river, is fairly well settled and very little of this land remains undisposed of. Small areas of dry sandy loam bench land are found north of the Thompson in sections 8, 17, 18 and 19 which, with abundant irrigation, would be suitable for fruit-growing. The timber in this valley is unimportant.

I next moved camp to a point in Spintlum Flat Indian reserve No. 3 in township 16, range 27, and on July 31 to a point in section 30, township 17, range 27, from which main camp I completed the examination of lands east of the Fraser as far north as the boundary of the railway belt.

Only a few scattered areas of bench land fit for agricultural purposes were found

east of the Fraser in townships 15 to 18, inclusive. In township 15, range 27, all the workable land east of the river sufficiently flat for cultivation is contained in sections 24 and 25. About 150 acres are workable, but this land would require abundant irrigation as the soil is sandy and porous. The remainder of the undisposed-of land in this locality is composed of gravelly cutbanks rising steeply to rocky hills. In township 16, range 26, east of the river, the hills come down to the water's edge in the southern part but recede as one goes north to about one-half mile from the river's edge, leaving a small flat in the northeast quarter of section 4, and small benches in the west half of section 16, the northwest of section 21, and the southeast quarter of section 32. None of these areas is in itself of sufficient size to provide sustenance for a settler, and they are all of small agricultural value without irrigation.

In township 17, range 27, east of the river, the hills rise steeply from points one-half to three-quarters of a mile from the river's edge, leaving small areas of bench land in sections 5 and 8, also about five acres in section 20, a considerable area adjoining but not included in lot 82 in sections 19 and 30, and a small area in section 31. These areas are all at an elevation suitable for fruit-growing, but require irrigation for successful cultivation. In the upper part of Luluwissin creek there is considerable land in sections 22 and 23 suitable for hay-growing, but oats tried in this locality were not successful on account of the elevation, which is 3,500 feet above sea-level. A valley extends southward through section 15 containing an area of gently-sloping land fit for hay-growing. Having a southern exposure it is probable that this land would require irrigation in spite of its elevation, which is also in the neighbourhood of 3,500 feet above sea-level. In township 18, range 27, the only land of agricultural value found was in the southwest quarter of the township, and consisted of a small area adjoining lot 83 to the east in section 6, and about fifty acres some two miles up the creek valley in section 5. The remainder of the township is rough timbered hills.

In township 18, range 28, east of the Fraser, lie a number of small areas of dry sandy loam bench land suitable for fruit, if irrigated. Sections 1, 12, 13, 14, 22 and 23 contain small areas of this nature, none of which is sufficient alone for one holding and all of which need abundant irrigation. A fine area of bench land is found in section 26 at an elevation suitable for mixed farming, though a trifle too high for fruit-growing. These bench lands could be irrigated from Cinquefoil creek and a dam at its south end would turn Cinquefoil lake into an ample reservoir for the irrigation waters.

The hills to the east of the main valley of the Fraser are rough throughout and the timber on them is of little value. They are covered mostly with a small scrub variety of pine and fir, the only areas of timber having any value being in the eastern part of township 17, range 27, and in the northern part of township 18, range 28, where a very fair class of bull pine and fir was found. On August 12, I crossed Fraser river by ferry and established the main camp in section 7, township 17, range 27, from which point I proceeded to examine the lands to the west of the river from the boundary of the railway belt southward. On the 21st, I moved camp southward to section 22, township 15, range 27, and continued examination of lands to the west of the river as far south as township 14.

The lands west of the Fraser, bordering as they do on the mountains of the coast range, presented the roughest area encountered up to that time in the season's work. All the land of agricultural value found lies within a mile of the river, the high mountains rising in some instances right from the water's edge. Fractional township 18, range 28, contains about 200 acres of excellent fruit land in sections 11, 14 and 15. This land borders on the Fraser and has a creek flowing through it which should provide abundance of water for irrigation purposes. Several old buildings are seen, and the land has every appearance of having been cultivated at one time. It is nearly all cleared, and the loam soil, though slightly sandy, should prove very fertile under proper treatment. The remainder of the unsettled part of this township,

west of the river, is steep rocky mountains covered mostly with timber, which is of small value on account of its inaccessible position.

Coming south into townships 17, in ranges 27 and 28, I found a number of small but fertile benches of excellent loam and sandy loam soil, generally suitable for fruit-growing, but in one or two instances more suitable for hay. These lands, with the exception of certain areas which lie as far as two miles westward, in the valleys of Intlpam and Siwhe creeks, are all situated within one mile of the river. The most southerly of these lands in this township is situated immediately west of the Fraser, partly in township 17 and partly in township 16. An area of about twenty acres of this land, although still undisposed of, is cultivated and, at the time of examination, was producing an excellent crop of beans.

Two factors may enter into the reason why these excellent lands, with abundance of water for irrigation purposes nearby, should not have been settled before now. Firstly, they are only accessible by pack trail from Lillooet, or by wagon road and ferry from Lytton. As there is only one ferry between Lytton and Lillooet, and it is privately owned, this feature places the lands in an undesirable position. Secondly, a number of these benches are at present occupied and cultivated by Indians, as for instance the bench at the south boundary of township 17, and the process of ejection is not attractive to the ordinary settler, possession being nine points of the law in the eyes of the red men.

Continuing southward through township 16, the country to the west of the river is essentially mountainous and, with the exception of those lands already laid out in Indian reserves, only two areas of agricultural land were discovered. One, already mentioned, at the north boundary of the township consists of about fifteen acres of bottom land at an elevation of 1050 feet above sea-level, in the southwest quarter of section 20. This last is at present under cultivation and is occupied by Indians.

The lands in township 15, range 27, west of the Fraser, follow the general character of lands in that locality. A strip of rolling bench land from one-half to one mile in width is found along the river between the water's edge and the mountains proper. West of this strip the mountains rise in rock formation towards summits of, in some instances, 8,000 and 9,000 feet above sea-level. Sections 28 and 33 hold a large area of workable bench land of sandy loam soil suitable for fruit-growing. About one hundred and sixty acres of workable land is contained in this area, fifty acres of which is cultivated and is producing hay. This land is evidently occupied by Indians. Agricultural land is also found in considerable areas in the southern parts of sections 22 and 23, and the northern parts of sections 14 and 15. Some of this also is under cultivation in hay and is occupied by settlers. Other agricultural areas, about seventy-five acres in extent, were found around the northeast corner of section 2; some of these are also under cultivation in hay. The southwest quarter of section 1 contains a number of small areas of bench and bottom land of from two to five acres each, which are mostly under cultivation in hay or fruit, and are evidently utilized by Indians. The land undisposed of in this township is nearly all timbered, but no areas of timber particularly valuable for lumbering purposes were noted. Bull pine and fir are scattered throughout, and show the greatest value in the south part of section 1, and in certain areas on the south side of Stein creek in the centre and west part of the township. Practically no grazing lands lie in this township.

On August 28, I returned to my old camp in township 17, range 27, west of the Fraser, to complete the examination of certain lands overlooked before on the assumption that they had been disposed of as Indian reserves. It was my intention here to move into the country surrounding the upper waters of Stein creek to make an examination of the lands there, upon which considerable comment, favourable and otherwise, was heard in the neighbourhood of Lytton. To this end I moved my outfit to Fish lake in the west part of township 17, range 28, with the intention of reaching the upper waters of Stein creek by way of a trail used by Mr. A. W. Johnson, D.L.S., about four years previously, in taking in survey supplies. At this point a continued

heavy snowfall was encountered, completely obliterating the old trail which was, at best, difficult to follow. Snow continued to fall, and the Indian who was to guide us over the passes failed to put in an appearance, so I decided to waste no more time in this attempt and moved my camp back to the Fraser, crossed to the east side by ferry and moved to a point in section 8, township 15, range 26, where, on September 9, I continued examination of lands eastward along the main valley, and to the south of, Thompson river.

Township 15, range 26, south of the river is a very rough area, consisting of steep mountain slopes rising from near the water's edge southward toward the summit of the Lytton mountains. A few small areas of stony bench land remain undisposed of in this locality, but they are of small importance on account of the difficulties in the way of irrigation. The chief characteristic of much of this area is its steepness and inaccessibility. It is timbered with a fair quality of pine and fir. The lands in the east part of township 15, range 26, north of the Thompson are chiefly rock hills, sparsely timbered with small and medium-sized pine.

On September 12, I moved camp to a point on Nicomen river in township 15, range 25, and continued the examination of lands in the main valley of the Thompson, and eastward through that township. No agricultural land was found in this vicinity west of the river, the surface being steep rocky side-hill, sparsely timbered with small pine and fir. Areas south of Thompson and Nicomen rivers show no agricultural land of importance, the whole being timbered hilly country, with some scattered areas of good pine and fir. Sections 16, 20, 21 and 22 contain areas of bench land aggregating about one hundred and twenty acres. The areas in sections 16, 20 and 21, to the extent of twenty acres, are dry sandy loam land, very suitable for fruit-growing, but they would need abundant irrigation. The lands in section 22, to the extent of about one hundred acres, lie at an elevation of 2,800 feet and upwards, and have possibilities of fertility under dry culture. They are gently rolling, of sandy loam soil, slightly stony in places, and are timbered throughout with a fair quality of pine and fir. This area is at too great an elevation to be irrigated from Nicomen river; the lands in sections 16, 20 and 21, however, could be irrigated from it, but at considerable expense.

Considerable land in the northeastern part of the township on the Nicomen plateau is gently rolling semi-open land with good sandy loam soil, but it is unlikely that these areas have any great agricultural value on account of their inaccessibility, though their altitude, which reaches 3,500 feet above sea-level in places, may not be too great for dry culture. No areas were found under dry culture at any altitude in this locality, so no report as to its possibilities could be obtained. The remainder of the land in township 15, range 25, is rough and valueless except for grazing purposes and for scattered areas of timber of merchantable size.

On September 19, I moved camp to a point near the north boundary of township 15, range 24, about three-quarters of a mile west of Nicola river, and proceeded with the examination of the lands adjacent thereto. On September 24, I moved camp to a point in section 4, township 15, range 23, and on the 28th to a point west of Spius creek in section 35, township 13, range 23, continuing examination of lands southward up the creek valley.

A few small benches of sandy loam soil were noted adjoining Nicola river in township 16, range 24, of an aggregate area not exceeding seventy-five acres. Other small areas about one mile west of the river in the southern part of the township were noted, as well as an area of about twenty acres in extent along the south boundary of section 5, which has been fenced and cultivated. These are the only areas of agricultural land found in townships 15 and 16, west of Nicola river in range 24. Township 16, range 24, contains a large area of good grazing land west of the river, but little timber of value is seen except in the southwestern part. Continuing southward along the valley of the Nicola, the lands to the west are chiefly rough timbered hills as far south as the south boundary of township 14. In township 15, range 23, there

is an aggregate area of about seventy-five acres of agricultural land undisposed of, lying in sections 8, 9 and 16, about forty acres of which is at an elevation suitable for dry culture, and the remainder of which would need irrigation. Some good areas of timber are found in townships 14 and 15, particularly along a creek valley in the west part of township 14, where a quantity of excellent bull pine and fir up to thirty inches in diameter is found. It is, however, in an almost inaccessible locality, and has small monetary value on that account.

The agricultural lands of township 13, range 23, were found to be fairly well settled, and little land of this nature remains unoccupied. Areas of good sandy loam soil suitable for cultivation, and totalling about one hundred and twenty acres, were found in sections 23, 27, 33, 34 and 36, but only one of these patches seems to be of sufficient area for a single holding. This area, containing about fifty acres of jack-pine flat in section 33, is at an elevation of 3,100 feet above sea level, and should be suitable for dry culture. The chief asset of the lands undisposed of in township 13, range 23, is the timber, much of which is excellent pine and fir up to thirty inches in diameter.

On October 7, I moved camp to a point in township 12, range 23, near the junction of Spius and Prospect creeks, and on the 15th to a point on Spius creek in the north part of township 11, range 23, and proceeded with the examination of lands in those townships.

In township 12, range 23, a considerable area of rolling and gently-sloping land was discovered which is attracting the attention of settlers. This land is chiefly in the neighbourhood of the junction of Prospect and Spius Creek valleys. It lies at elevations from 3,000 to 3,500 feet above sea level and has a fertile loam or sandy loam soil. These features suggest that the land would be suitable for dry culture, and the large timber and luxuriant undergrowth suggest great fertility. Four squatters' notices were discovered posted on this land and two more westward up the valley of Prospect creek. It is claimed that the temperatures of this area are not more severe than those in the neighbourhood of Merritt, B.C., the altitude of which is over 1,000 feet lower. I was unable, however, to find any authentic record of temperature to bear out this claim.

Another area of excellent bench land was found at the south boundary of the township and extending southward into township 11, as well as a number of small benches west of Spius creek in township 12. The soil in these areas is sandy loam and at elevations of 3,000 feet and upwards is covered with a luxuriant growth of grasses and shrubs. The main area, however, is about one hundred and fifty acres in extent and lies in the east part of section 4, township 12, range 23. Its elevation averages 2,750 feet above sea level and it is quite free from undergrowth, being covered with open bull pine timber averaging sixteen inches in diameter. Irrigation of this area could be accomplished from Spius creek. Much good pine and fir was noted in township 12, but the timber in township 11 is small and much of the south part of the township has been burned over. Only a flying examination was made of Prospect valley west of range 23, it being found to contain only steep side-hill lands, except near the head-waters where the elevation was found to be in the neighbourhood of 4,000 feet above sea level.

The country in the central and south part of township 11, range 23, proving rough and useless, I discontinued work in that locality, and on October 23 moved my party eastward into the valley of Coldwater river and thence southward to a camp in township 9, range 23, where I continued work in the Coldwater valley and in the neighbourhood of Murray lake.

A few acres of good land suitable for hay-growing were found at the north end of Murray lake in township 10, range 23. About fifteen acres of this is slashed and cleared, and some of it planted in hay. The elevation around Murray lake is too great for anything but hay, being 3,670 feet above sea level. No other agricultural land

was found in township 10, range 23. The township is very mountainous throughout, and presents little value of any kind. A detailed examination was not made.

Township 9, range 23, is traversed from north to south through its eastern part by the valley of Coldwater river, which is a narrow valley of bottom land flanked by steep rolling hills. Extending almost to the south boundary of the township this strip of land varies in width from ten to thirty chains, and in one place to nearly one mile, and shows agricultural value throughout. Its soil is composed chiefly of a reddish loam, the appearance of which suggests the presence of a small amount of clay. Certain areas show a gravelly subsoil, but these are not large in extent. Its elevation ranges from 3,180 feet above sea level, in section 36, to 3,400 feet and upwards in section 2. Hay-growing should be successful throughout, and even the hardier vegetables should do well in the northern part of the valley. There is very little grazing. The value of the timber is small in the northern part of the township, there being a great deal of scrub growth west of the river. There is, however, some spruce, fir and pine fit for railway ties. Much of the land in the centre and south part of the township has been burned over and all the timber destroyed. Settlers are already moving into this valley, and with the completion of the Kettle Valley railway the development of the valley should progress favourably.

On November 2 a heavy snowfall was encountered. I accordingly discontinued work in range 23, and on the 4th moved my party towards Merritt, B.C., where I arrived the following day. On the 6th I sent my pack train, loaded light, overland to Lytton, sent my camp equipage by express and took my party there by train. At this point, not being able to obtain a wagon and team to move my outfit, I was obliged to await the arrival of my pack train, which reached Lytton on the evening of November 7. The next day I moved south to a camp in section 36, township 13, range 27, and continued the examination of lands in the main valley of the Fraser.

Practically no agricultural land of importance was found in townships 13 and 14, west of the river. Bordering, as these lands do, on the mountains of the coast range, they are composed almost entirely of steep rocky slopes rising from the water's edge. There are, however, a couple of small benches adjoining the river and immediately south of Skway-ay-nope Indian reserve No. 26. These benches, having an aggregate area of less than twenty acres, are suitable for fruit-growing; a small portion of the area is cultivated and utilized by Indians. The hills are all timbered with small and medium-sized fir and pine.

East of the river in these townships much the same conditions exist, although the slopes are less sharp. For about three-quarters of a mile east of the river the slope is fairly gradual, but at this point the base of the mountains proper is reached. In the southern part of township 13 the mountains rise to eastward, right from the water's edge. An aggregate area of 50 acres agricultural land was found undisposed of in townships 13 and 14 east of the river. This is scattered in various small areas throughout sections 24 and 25 of townships 13, and sections 1, 23, and 25 of township 14. Most of them are occupied, and some cultivated, by Indians. The lands east of the river are all more or less timbered, but on account of the rocky formation the timber is small and scrubby.

On November 12, I moved camp southward to a point in township 12, range 26, east of the Fraser and near the northeast corner of section 19, and continued the examination of lands in this township and in that to the south.

The Fraser valley through these townships follows its general character, although the lands in township 12 have a somewhat gentler slope near the river. In township 12 the lands rise to the east and west from the water of the river, leaving small areas of bench land from one to one and a half miles from the river, from which points the mountains rise steeply through rocky formation. The bench lands in township 12, range 26, to the east of the river, are chiefly small areas of loam and sandy loam soil, at present occupied and in some instances cultivated by Indians, notably in sections 3, 4, 9, 10, 16 and 20. An aggregate area of over three hundred acres in these

six sections is agricultural land, all of which is less than 1,600 feet above sea-level. It is claimed by the occupants of these lands that local conditions of temperature render them unfit for fruit-growing in spite of the low altitude. This condition is not consistent with conditions to the west of the river, where a flourishing orchard was found at an elevation only slightly less than that of the greater part of these lands. In my opinion these lands could be utilized for almost any kind of agricultural development. A long narrow bench runs parallel to the river through sections 29 and 31 and contains about seventy-five acres of land more adapted to fruit-growing than to other agriculture. Its soil is a deep sandy loam, with a large amount of surface stones.

West of the Fraser, in township 12, range 26, the lands suitable for agricultural development are fairly well taken up. There remains about one hundred acres of good bench land in section 5, about five acres of which is cleared and the remainder covered with a rather dense growth of small fir, birch and alder. Small benches, to the extent of about forty acres were also noted in sections 8 and 17; all of these are at an elevation suitable for fruit-growing. The timber in this township is of small value except in the area included in timber berth No. 428 and in sections 3 and 9, east of the river, where some good tie timber was seen.

In township 11, range 26, east of the river, only a few small benches adjoining the river were found; the most notable of these lie parallel to the river through section 14, adjoining Boston Bar Indian reserve No. 4. Old buildings there showed past occupation, and in the land south of the reserve some recent improvements have been made. This land shows good deep sandy loam soil and should produce a very good fruit crop.

West of the river a number of benches, having an aggregate area of about two hundred acres, were noted in sections 11, 14, 15, 32 and 33. This land is generally of sandy loam soil with some areas slightly gravelly and stony and all at an elevation suitable for fruit-growing. Portions of this area near the river are open, but most of the area is timbered with a dense growth of young fir, birch and alder. The remainder of the township is timbered throughout, but no timber of merchantable value was noted, it being of small and scrub variety on account of the rock formation.

At this point, on account of the difficulty in obtaining feed for the horses, and the small amount of land still to be examined in order to close on lands examined by Mr. G. A. Bennett, D.L.S., in 1910, I decided to disband my party and complete the work without their assistance. Having therefore completed as much as could be satisfactorily done from my camp in township 12, range 26, I moved into Lytton on November 22 and, when I had disposed of my outfit, disbanded my party. I then went to North Bend by train and made examination of the lands east of the Fraser in townships 9 and 10, range 26, and part of the township west of the river.

After a preliminary examination of townships 9 and 10 east of the river, I was convinced that a detailed examination was unnecessary. The valley of the Fraser in these townships presents a much rougher area than that met with heretofore in this season's work. Throughout almost the entire length of the valley in these townships the steep rocky mountainous slopes to the east of the river rise from the water's edge. The only agricultural land noticed has already been disposed of. The lands are timbered throughout, but the timber is similar to the general class on these mountains, being small and scrubby.

Throughout the work of this season many unsurveyed lands were examined and it was necessary to tie these lands to the Dominion system. This was done almost entirely by stadia traverse, which method was found most satisfactory, both as regards speed of operation and accuracy. The elevations determined in the work are all given in feet above sea-level. These were computed from the readings of aneroid barometers which were compared each day with a large stationary aneroid kept in camp. Readings were taken on the camp aneroid every two hours and, by interpolation, practically simultaneous readings were obtained, one aneroid, the stationary, being read at a point whose elevation was known and another at the point whose elevation was

desired, or vice versa. In this way, by a system of back-sights and fore-sights, actual elevations above sea-level were carried throughout the work, it being the rule to first obtain the elevation of the stationary aneroid at camp and compute the other elevations from this known point. Besides the elevations of various points along the main line of the Canadian Pacific railway, which were furnished me with my instructions, the elevations of certain bench-marks determined in the survey of the Canadian Northern Pacific railway in the Fraser valley, of the Canadian Pacific railway in the Nicola valley, and of the Kettle Valley railway in the Coldwater valley in range 23, were used as bases from which to compute elevations of other points.

On November 27, having completed work for the season I returned to Lytton and when I had completed my arrangements there, went to Kamloops, where I spent parts of two days in the Dominion Lands office checking over areas disposed of and not shown on the district plans. I left Kamloops on November 29 for Orillia, Ont., where I arrived on December 4.

TOWNSHIPS 8 AND 9, RANGES 26 AND 27, AND TOWNSHIPS 10, 11 AND 12, RANGE 26, WEST 6TH MERIDIAN.

Report by P. Melhuish, D.L.S., Season, 1912.

After receiving my instructions, I left Vancouver on May 11, 1912, for Spuzzum, to make surveys in township 8, range 26, west of the sixth meridian, and to survey timber-berth No. 552. The first camp was made in section 36, near Spuzzum station, which is on the main line of the Canadian Pacific railway, about 114 miles east of Vancouver. As the old Yale and Cariboo road is entirely obliterated in a great many places along the Fraser canyon, the railway is the only means by which the northerly half of this township can be reached. This road has, however, been repaired in places to a certain extent by the Canadian Northern railway contractors and it is possible to travel by wagon from Yale to a siding known as Saddle Rock, in the southern part of the township. All the agricultural land is included in Spuzzum Indian reserve No. 1 and a few small flats outside the reserve hardly large enough in area to be considered profitable. These small flats are adjacent to the Canadian Pacific railway line and the rest of the land in the township lies on steep mountain sides, timbered with fir and jackpine, and entirely unsuitable for agriculture. No minerals of economic value were found in the township.

The next camp was made in lot 4, near the mouth of Spuzzum creek. This creek is the only one of any considerable size in the township. It flows in an easterly direction and empties into Fraser river in section 24. While working from this camp a trail was made up the left bank of Spuzzum creek. An old trail was found, but it was necessary to cut parts of this out again and to do some mattock work on the steep side-hills. After finishing the subdivision work, camp was moved up the creek in order to continue the survey of timber berth No. 552. This berth is situated in townships 8, ranges 26 and 27, and township 9, range 27, west of the sixth meridian, and lies on each side of the valley of Spuzzum creek. The berth was surveyed to include all the available timber of value not already taken up, for a distance of about eleven and a half miles from the mouth of Spuzzum creek up the north fork, and about nine miles from the mouth of the creek up the south fork. The area of the timber berth is about 4,470 acres. Spuzzum creek is a swift mountain stream with an average depth of about three feet and a width varying from half a chain to a chain. The bed is very rough and is composed of large granitic boulders. The mountains slope towards the creek at a very steep angle on each side, and for a distance of about three-quarters of a mile from where the Canadian Pacific railway crosses, the water runs through numerous small canyons. The elevation of the main forks, which are about six and a half

miles from the mouth of the creek, is 1,200 feet above the Fraser. The highest falls, however, are only about twelve feet, and there is hardly sufficient water during the dry period to warrant the construction of a dam.

The old trail which we found followed the general direction of the creek from the railway line as far as the main forks. A new trail was cut out from the main forks to the second forks, on the north branch of Spuzzum creek, a distance of about four and a half miles. Another trail was made up the south fork a distance of about two miles. All the transportation up the creek was done by man packing; more work would be necessary on the trail to render it suitable for pack-horses to travel on.

The berth contains some good cedar, fir and hemlock, most of which is near the creek, but it will be difficult to get it out. The timber becomes scrubby and generally rotten on the inside at a distance ranging from twenty to thirty-five chains from the creek.

As far as the berth extends, no minerals were found, but farther up the north fork graphite has been discovered, and there seems to be a possibility of this being mined in the near future.

Bears, deer and mountain goats are found in the mountains near the creek, and brook trout are plentiful.

The survey of the berth was finished on September 19, and it occupied two days for the party to move the outfit down to the railway. The next work was the survey of the northwest quarter of section 36, township 7, range 26. There is a small flat in this quarter section which contains about five acres of agricultural land which could be irrigated from Fivemile creek.

After finishing the survey of this quarter section the party was moved to North Bend by rail, to make surveys in townships 10 and 11, range 26, west of the sixth meridian. There are five or six settlers in township 11 who have taken up lands on the sloping benches. These lands are timbered with fir, birch and alder, and in parts are easily cleared. Two settlers on the east side of Fraser river have taken up quarter sections in sections 14 and 23, where there is some good timber which would be suitable for ties. No difficulty was experienced in crossing the Fraser about two miles above North Bend by means of an Indian dug-out canoe.

A wagon road is being built by the British Columbia Government from North Bend to Chaumox, a distance of about five miles along the Canadian Pacific railway. This road will allow the settlers to haul their produce to North Bend, which is a railway town, with car repair shops and yards for making up freight trains.

There are several creeks suitable for irrigation purposes in township 11, but none large enough for generating electric power.

After finishing the work in township 11, somewhat over three miles of line were run in township 10, where a tie was made to the Canadian Pacific railway right of way. The lines in this township were over high rugged mountains, and ran round an Indian reserve and two small farms.

The next work undertaken was at Keefers in township 12, range 26, where the party was moved by rail on November 21. Camp was made opposite Keefers station, and slight trouble was experienced in obtaining wood. The work undertaken lay in section 30 on both sides of the Fraser, which was crossed by means of the cable owned by the Canadian Northern railway contractors. There is a small area of flat land on the east side of the river in section 30, but it would require considerable clearing, and the soil is too rocky to be profitable. It contains some good fir for tie timber.

The country seen during the season in townships 7, 8, 10, 11 and 12, range 26, is all mountainous. The most desirable land was in township 11, where settlers will, after clearing their land, be able to market their produce with no trouble. The land in all these townships requires irrigation, and after this is effected vegetables and fruit of good quality can be raised.

The grading of the Canadian Northern railway which runs on the east side of the Fraser through these townships is nearly finished, and work on the bridges and

culverts is being rapidly pushed ahead. It is expected that the railway will be open in 1915, and when the progress of the past year is considered this seems quite feasible, even considering the difficulties encountered in the Fraser canyon.

There are no summer frosts in the country covered by the season's work. The first frost was on October 14, and the climate generally does not run to extremes. There is considerable rain in the North Bend country during the late autumn, but in the summer the climate is dry except in the high mountains. No minerals of any value were found, and no coal-bearing formations were seen. Bears, deer and mountain goats are plentiful at a short distance back from the railway, and salmon are caught by the Indians, some of whom rely on this to some extent for their winter food. Grazing land is scarce, and the only cattle we saw did not appear to be in good condition for wintering.

The transport arrangements were effected by means of the Canadian Pacific railway and by hiring locally a team and wagon, as required.

The party disbanded at Keefers on December 3 owing to the difficulty of working on the mountain sides with snow on the ground.

DESCRIPTION OF TOWNSHIPS.

Tp. 16, R. 16, W. 6th Mer. *A. V. Chase, D.L.S., 1910.*

SEC. 24 TO 27; SECS. 34 TO 36.—Very little of this is below the 4,000 foot contour and it is all over 3,700 feet above sea. No agricultural value; mainly great rolling hills covered with scrub jack pine; one or two small meadows along extreme west boundary; only poor grazing as a rule; no lumber value in timber, great deal of underbrush

A. J. Campbell, D.L.S., 1909.—PART SECS. 29, 30, 31, 32.—According to the settlers, in this part it is impossible to raise grain or vegetables successfully, having frosts during the summer, the only land of value being the meadow land from which hay for winter feeding may be obtained. There are a number of meadows in this part, the best of which are in Group Lots Nos. 477 and 588. Outside of these there are a few meadows suitable for hay. In NW. $\frac{1}{4}$ of sec. 30, a meadow of about 20 acres in extent and in sec. 32, SW. $\frac{1}{4}$, meadow land to about 40 acres. There is considerable land which could be cultivated but of no value as farm land on account of altitude and summer frosts; soil, black loam and sandy clay loam, solid rock showing to south and east in sec. 29. The bush is practically all jackpine up to 10 inches, averaging 3 inches, with some small poplar and willow brush and a few scattered fir of fair size on summits of hills, not of profitable timber value; altitude ranges from 2,475 to 3,000 feet above South Thompson river; pine grass throughout which affords a certain amount of grazing.

Tp. 17, R. 16, W. 6th Mer. *A. J. Campbell, D.L.S., 1909.*

SECS. 4 TO 9, 16 TO 21, 28, 29, 30, 32 AND 33.—In these sections there is considerable land suitable for cultivation, gently rolling bench land, but according to settlers of no value as farm land on account of frosts. The only land of value being the hay meadows, of which there are several, the best of which are included in lands already disposed of: sec. 9, S. $\frac{1}{2}$; sec. 18, E. $\frac{1}{2}$ of SE. ; sec. 20, W. $\frac{1}{2}$. There are a few small lakes and ponds scattered over, containing fair water; altitude ranges from 2,275 to 3,210 feet, but is generally around 2,600 feet; soil, black loam and sandy clay gravel in places; bush consists generally of jack pine to 10 inches, averaging 3 inches, poplar and brush with fir in clumps scattered over, in places of timber value, particularly in secs. 7, 18, 19 and 30; timber grass throughout affording a poor class of grazing. In sec. 8 W. $\frac{1}{2}$, there is a good meadow of about 30 acres in extent which is claimed by J. R. Macdonald. The better meadows are as follows: Sec. 7, SE. $\frac{1}{4}$, 15 acres; sec. 9, NW. $\frac{1}{4}$ 20 acres; sec. 16, SW. $\frac{1}{4}$ and SE. $\frac{1}{4}$, 40 acres; meadow and brush flat, lake 20 acres in SE. $\frac{1}{4}$; in sec. 20 NE. $\frac{1}{4}$, south of Rock Lake, meadow land, 8 acres.

SEC. 31, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Very rolling bench land broken by valley of small creek through SE. and NE. $\frac{1}{4}$'s, from 2,080 to 2,550 feet above river; a small area of bottom land along Fish creek in NE. $\frac{1}{4}$ suitable for farm; soil, black loam and sandy clay, with some solid rock; scattered fir to 25 inches averaging 10 inches, of timber value, and small jack pine, fir, poplar and brush; 25 per cent farm value; poor grazing.

A. V. Chase, D.L.S., 1910.—With the exception of certain sections at the north-west corner of the reserve hereinafter described, this part of of the reserve consists almost entirely of a great range of hills rising to nearly 4,700 feet in places and with the exception of a small strip running along the west boundary is all over 4,000 feet above sea level. On these hills there is practically no value except isolated stretches

of fair grazing and one small patch of 18-inch spruce covering most of that part of section 1 not taken up by a lake. This is of doubtful lumber value especially as it is isolated and would not pay the cost of cutting. The remainder is covered almost entirely by a dense growth of small jack pine too thick to walk through. In some places this approaches 8 inches in size, but is mostly scrub about 15 to 20 feet high and some only 10 feet. The hills are composed of rock with light covering of sandy loam soil. Evidently the whole has been burned over.

SECS. 3, 10, 15, W. HALVES.—In general over 3,700 feet above sea. These sections contain various small hay meadows which yield a fair quantity of wild hay, but will not grow timothy. A certain amount of fair grazing is found where jack pine is not so thick, but in general the brush is too thick to walk through. No agricultural value.

SEC. 22.—From 3,770 to over 4,000 feet above sea. Much the same as rock hill as in section 34 described; all dense jack pine, some to 10 inches; no agricultural value; rolling and stony in places; poor grazing.

SEC. 27.—From 3,550 to 3,810 feet above sea. In this section is found a considerable amount of workable slope running east from the lake in west $\frac{1}{2}$; the soil is deep loam and without stones and there is sufficient water in small lakes to east for irrigation; it is claimed that this will grow hay; timber value in fir to 20 inches diameter; fair grazing.

SEC. 34.—From 3,550 to over 4,000 feet above sea. This is composed almost entirely of a rock hill covered with scattered fir to 20 inches; in parts this timber is of value but in general is too thinly scattered; poor grazing.

SEC. 35.—From 3,690 to over 4,000 feet above sea. Possible timber value in W. $\frac{1}{2}$ in fir to 20 inches diameter; fair grazing as a whole; no agricultural value.

Tp. 18, R. 16, W. 6th Mer. *A. J. Campbell, D.L.S., 1909*

SEC. 1; SEC. 2; SEC. 3.—Rough, hilly bench land, 2,280 feet to 2,950 feet; two lakes of about 20 to 30 acres with good water, one in S.W. $\frac{1}{4}$ Sec. 3 and other in east half of Sec. 2, small pieces of meadow land which would probably produce hay, no land of agricultural value; slopes to south rough and rocky, solid rock showing on the hills in many places; soil, sandy clay loam and gravel; small thick jackpine, poplar, fir and brush, clumps of fir up to 20 inches on the hills, not of profitable timber value; some grazing throughout.

SEC. 4, NE. $\frac{1}{4}$.—Steep slopes rising to south from small creek and small lake to north, 2,150 to 2,800 feet; small area of land on gentle slopes along creek, soil, black loam and sandy clay loam; thick small jackpine, poplar and brush, scattered fir in places up to 20 inches, averaging 10 inches, of some timber value; 25 per cent farm value; some grazing.

SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—High hill towards east, slope falling quickly to east and gently to west, 2,420 to 2,900 feet; some flat land to north of Rock lake and lands on gentle slope to NE. of lake; water very alkaline; soil, sandy clay loam and gravel; part of small lake on west boundary; small jackpine, poplar, fir, spruce and brush, fir up to 20 inches to south and west, of timber value; 15 per cent farm value; some grazing.

SEC. 5, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$.—Steep slopes on each side of Fish lake, 2,140 to 2,625 feet; small area of lowland to SW. along creek and lands on gentle slopes to south suitable for cultivation, of very doubtful farm value; soil, sandy clay loam; fir up to 20 inches, averaging 10 inches, well covered to south and east, jackpine, poplar to west, of timber value; some grazing.

SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Bench land, gentle slopes to NE. from creek in SW. corner, dry bed; small lake in SE. $\frac{1}{4}$, alkaline; partially suitable for cultivation, of very doubtful agricultural value; soil, sandy loam; fir to 20 inches, averaging 10 inches, jackpine, poplar and brush of some timber value; grazing.

SEC. 6, SE. $\frac{1}{4}$.—Fish creek through centre; steep slopes to NW., gentle slopes to SE.; 2,090 to 2,450 feet above river; a few acres of low land along river; soil, sandy

clay loam, very stony on slopes in NW. part; thick small jackpine, fir and poplar and brush, scattered fir up to 30 inches, averaging 20 inches, of timber value; open spaces in NW. part; 15 per cent farm value; grazing.

NE. $\frac{1}{4}$, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Slopes rising to north from Fish creek, very stony and rocky, 2,100 to 2,700 feet above river; no land of agricultural value, rough and broken, soil, sandy clay loam and rock; open spaces on south; fairly well covered with fir up to 25 inches, averaging 15 inches, and some bull pine to south, small jackpine, fir, poplar and brush, some timber value; fair grazing land.

SEC. 7, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Steep broken and rocky slopes rising to east, 2,200 feet and upwards; no land of agricultural value, soil, sandy clay loam, very stony; fir up to 25 inches, averaging 15 inches, and small fir, jackpine, poplar and brush, some timber value; grazing.

SEC. 8, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Steep slopes rising to north from Fish lake, 2,140 to 2,850 feet above river; no land of agricultural value, stony and rocky in places, soil, sandy clay loam and sandy loam; bull pine and fir of possible timber value, small fir, poplar and some jackpine; some grazing.

SEC. 9.—High rocky hill NE. corner, slopes falling to south and east, steep slopes rising to NW., 2,140 to 2,850 feet above river; SE. corner in small lake and SW. corner in Fish lake; small area of land along south suitable for cultivation; soil, sandy clay loam and rock; fir and bull pine to south, of timber value and small fir, poplar and brush; land, 15 per cent farm value; scant grazing.

SEC. 10, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Steep rock slopes rising to east from narrow valley in west part from 2,300 to 2,600 feet; a few acres of meadow land in valley would produce hay, no land of agricultural value; small creek to south with steep slopes rising to south; soil, black loam and sandy loam; small jackpine, poplar, willow, a few scattered fir and some bull pine, not of much timber value; some grazing.

NW. $\frac{1}{4}$.—Steep, broken rocky slopes rising to NW. from 2,350 to 2,825 feet above river; no land of agricultural value, sandy loam and rock; scattered fir and some bull pine, scrubby, and small jackpine, poplar and brush, no timber value; poor grazing.

SEC. 11.—Rough, rocky and hilly land, broken by gullies, from 2,500 to 3,000 feet above river; small low spots and meadows; small lake in NE. $\frac{1}{4}$; no land of agricultural value; soil, sandy clay loam; fir up to 20 inches to south and west of section, some bull pine and fir to NW. of timber value, jackpine, poplar, small fir and brush, thick in places; fair grazing land.

SEC. 12, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Valley runs north through quarters with some small meadows and brush land; hay land; steep slopes to east and rolling, hilly bench land to west, 2,400 to 2,735 feet; soil, black loam and sandy clay, stony in places; scattered fir to 25 inches, jackpine, poplar, small fir and brush, of timber value; grazing land.

SEC. 13, NE. $\frac{1}{4}$.—Valley of small creek running north, no water, very narrow, slopes rising to east and west to rock hill, from 2,250 to 2,520 feet; partially suitable for cultivation, of very doubtful agricultural land, soil, black loam and sandy loam and gravel; fir to 30 inches, averaging 15 inches, jackpine, poplar, small fir and willow brush, of timber value; some grazing.

SEC. 14; SEC. 15, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$; SEC. 22, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$; SEC. 23, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$, SE. $\frac{1}{4}$. These sections are covered by high rocky hill from 2,300 feet upwards; summit to SW. of sec. 23 no agricultural value; scattered bush on west slopes, thick small bush to east, fir, jack pine, poplar and brush, some clumps of fir and a few bull pine in places, of some timber value; grass affording grazing in places.

SEC. 15, NW. $\frac{1}{4}$.—Very rolling bench land; steep rocky slopes SW. corner, from 2,300 to 2,690 feet; partially suitable for cultivation, of doubtful value, small meadow to east from which hay is cut; soil, sandy clay loam and black loam; small jackpine, poplar and brush, with a few scattered fir to 30 inches on west, not of much timber value; grazing poor.

SW. $\frac{1}{4}$.—Summit of rock hill in NW. corner slopes falling to east and north, from 2,450 to 2,875 feet above river; no agricultural value; small jackpine, fir, poplar and brush, some scattered fir to 30 inches, no timber value; grazing poor.

SEC. 16, FRAC. NE. $\frac{1}{4}$, FRAC. SE. $\frac{1}{4}$.—Lake in centre of section, steep slopes rising to east from lake, 2,295 to 2,870 feet above river; some land to west of NE. $\frac{1}{4}$ suitable for cultivation, of doubtful value; soil, sandy, clay loam and gravel; thick small bushy fir, jackpine, poplar and brush, a few scattered fir and some bull pine of fair size, of some timber value; grazing very poor.

NW. $\frac{1}{4}$.—Very steep slopes to west; some land to east, near lake in centre of section, suitable for cultivation, of doubtful value; soil, sandy clay loam and gravel; thick, small bushy fir, jackpine, poplar and brush, a few scattered fir and bull pine of fair size, of some timber value; grazing, very poor.

SEC. 20, NE. $\frac{1}{4}$.—Bench land, rolling; fairly level land in NE.; steep slopes to SW. from 2,300 feet upwards; partially suitable for cultivation; soil, sandy clay loam, some gravel; thick small fir, jackpine, poplar and willow, scattered fir to 20 inches, averaging 8 inches, of some timber value; 15 per cent farm value; grazing very poor.

SEC. 21, NW. $\frac{1}{4}$.—Bench land, rolling; from 2,160 to 2,450 feet above river; partially suitable for cultivation; soil, sandy clay loam; scattered fir to 25 inches, averaging 8 inches, small jack pine, fir, poplar and brush, some timber value; Scuittoe creek across NE. corner; 25 per cent farm land; fair grazing.

SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Rolling bench land, rough and broken; steep slopes to SW.; 2,150 to 2,600 feet; partially suitable for cultivation; soil, sandy clay loam and gravel; small jackpine, poplar, fir and brush, a few scattered fir of fair size, no timber value; 15 per cent farm value; fair grazing.

SEC. 22, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Very rolling bench land, broken by gullies; from 2,125 to 2,400 feet; small area low land in NW. corner; solid rock showing in a few places; partially suitable for cultivation; small jackpine, poplar, fir and brush, scattered fir to north up to 30 inches, some timber value; 15 to 50 per cent farm value; grazing poor.

SEC. 23, NE. $\frac{1}{4}$.—Rolling bench land, gentle slopes rising to SW., steep and rough in SW. corner; 2,210 to 2,600 feet above river; partially suitable for cultivation; soil, sandy clay loam and some gravel; small fir, jackpine, poplar, willow and a few fir to 20 inches in places; 25 per cent farm value; grass in places.

SEC. 24, FRAC. SE. $\frac{1}{4}$.—Rolling bench land to north, rough and hilly and some rock to south; 2,230 to 2,480 feet above river, partially suitable for cultivation; soil, clay loam and some gravel; small jackpine, poplar, fir and brush, open to north part near lake, fir up to 30 inches in places, of some timber value; 25 per cent farm value; grazing.

SEC. 26, FRAC. NE. $\frac{1}{4}$, FRAC. NW. $\frac{1}{4}$.—Rolling bench land rising gently to NW. from Campbell lake; 2,180 to 2,490 feet; NW. part broken and rocky, some land to east and along lake suitable for cultivation; soil, sandy clay loam and black loam, stony in parts; partially open; scrubby fir, bull pine to NW. and clumps of small poplar and willow; 50 per cent farm value; good grazing.

FRAC. SE. $\frac{1}{4}$, FRAC. SW. $\frac{1}{4}$.—Rolling bench land in SE. $\frac{1}{4}$ and very small area along lake in SW.; very steep rock hills rising from lake to west part, worthless; partially suitable for cultivation; soil, sandy clay loam, stony in parts; fir to 20 inches, averaging 8 inches, jackpine, poplar and brush, of some timber value; land 40 per cent farm value; some grazing.

SEC. 27.—North of Campbell and Scuittoe lakes, slopes rise rapidly to north to rocky hills; 2,160 to 2,575 feet above river; no land of agricultural value; to the south, steep rocky slope in SE. $\frac{1}{4}$, low land in SW. suitable for cultivation, 50 per cent farm value; soil, sandy clay loam and black loam, very stony to north; open spaces to north, scattered fir and bull pine up to 30 inches, averaging 10 inches, some

timber value, jackpine, poplar and willow to south, and a few scattered fir; 40 per cent farm value; good grazing to north.

SEC. 28, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$.—Rocky slope rising to north from 2,090 to 2,600 feet above river; no agricultural land; open to south, very scattered bull pine and fir up to 30 in., averaging 20 inches, some timber value; good grazing land.

FRAC. S.E. $\frac{1}{4}$.—Scuittoe lake covers most of quarter; low land to south and west of lake suitable for cultivation, small area to north on gentle slopes; 2,160 to 2,320 feet; very stony, partially suitable for cultivation; soil, black loam and clay loam; very scattered bull pine and fir to north, up to 30 inches; fir to west and small jackpine, fir, poplar and brush; 40 per cent farm value; fair grazing.

SEC. 29, NW. $\frac{1}{4}$.—Bench land; small pond in SE. part; slopes rising to west from 2,190 to 2,530 feet, a few acres of land suitable for cultivation near lake; soil, sandy clay loam; partially open, small fir, jack pine, poplar and willow brush, a few bull pine to north, not of profitable timber value; 25 per cent farm value; poor grazing.

SE. $\frac{1}{4}$.—Bench land on gentle slopes rising to SW. from Scuittoe creek, steep in S.W. corner, partially suitable for cultivation; soil, sandy clay and some gravel; small fir, jack pine, poplar and willow brush, no timber value; land 15 per cent farm value; some grazing.

SECS. 32, 33, 34.—These sections covered by rocky hills from 1,700 to 2,700 feet above river; Scuittoe creek through sec. 32 falls rapidly; deep ravine, steep sides; no land of agricultural value; partially open, bull pine and fir over greater part to 20 inches, averaging 12 inches, small fir, poplar and brush, of timber value; fair grazing land.

SEC. 35, FRAC. NE. $\frac{1}{4}$.—Rolling bench land rising gently to west from lake; 2,180 to 2,320 feet; suitable for cultivation; soil, black loam and clay loam; open, a few bull pine and fir to west; no timber value; land 50 per cent farm value; good grazing.

NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Rough, rolling bench land from 2,200 to 2,500 feet; rocky to west and SW. partially suitable for cultivation; soil, black loam and clay loam; fir and bull pine to 20 inches, averaging 10 inches, of some timber value, small poplar, fir and brush; land 25 to 50 per cent farm value; fair grazing land.

Tp. 19, R. 16, W. 6th Mer. *A. J. Campbell, D.L.S., 1909.*

SEC. 1, NE. $\frac{1}{4}$.—Rolling bench land, slope rising to east; rocky in part; from 2,200 to 2,575 feet; considerable part suitable for cultivation; soil, black loam and clay loam; open country, a few fir and bull pine to NE. part; 25 to 50 per cent farm value; good grazing land.

NW. $\frac{1}{4}$.—Bench land, rolling gently, all suitable for cultivation; from 2,200 to 2,340 feet; no water; soil, black loam and clay loam; open country, a few clumps small poplar and jack pine; 50 per cent farm value, good grazing land.

SE. $\frac{1}{4}$ (E. $\frac{1}{2}$).—Lake covers good part; rolling bench land from 2,250 to 2,350 feet; partially suitable for cultivation, stony in part; soil, clay loam and gravel; open country; 25 per cent farm value; good grazing.

SEC. 2, NW. $\frac{1}{4}$.—Bench land, rolling; steep slopes falling on north from 1,940 to 2,250 feet; considerable to south and east suitable for cultivation; solid rock outcropping to west; soil, clay loam some gravel; open in NE. part, thinly covered with fir and some bull pine to west and south, small poplar, fir and brush, of some timber value, 25 per cent farm value; fair grazing.

SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Very rolling bench land; steep slopes to SW. from 2,230 to 2,600 feet; rocky; considerable land to north and in SE. $\frac{1}{4}$ suitable for cultivation, soil, clay loam and some gravel; thinly covered with fir, up to 20 inches, averaging 10 inches, of some timber value, small fir, poplar and brush; land 25 per cent farm value; grazing fair.

SEC. 3, 4.—Rough, broken bench land, small rocky hills, slopes rising to south, from 1,650 to 2,675 feet above river; no agricultural value, soil, sandy clay loam; fir up to 20 inches and a few bull pine to north, small fir, jackpine, poplar and brush to south, of some timber value; fair grazing.

SEC. 5, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Steep rough slopes rising to east from Campbell Creek valley, rocky in part, from 1,000 feet to 2,100 feet above river; no agricultural value; soil, sandy clay; fir and bull pine up to 30 inches to north, small fir, jack pine, poplar to south, of some timber value; some grazing.

SEC. 6, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Steep rocky slopes, rising to west and north from Campbell creek, from 920 to 2,000 feet above river; no land of agricultural value; scattered scrubby bull pine and a few fir, no timber value; some grass in places.

SEC. 7, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Steep rocky slopes rising to west from Campbell creek from 875 feet to 2,000 feet above river; no land of agricultural value; bull pine and fir, scrubby, small fir, poplar and brush, no timber value; grass in places, poor grazing.

SEC. 8, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Steep slopes, rocky in part, rising to east from valley of Campbell creek; very rolling bench land to SE.; from 875 to 1,600 feet above river; small part of land to SE. suitable for cultivation, of doubtful value as farm land; soil, light, sandy clay loam, stony; thinly covered with bull pine and fir up to 30 inches, averaging 12 inches, of some timber value, small on steep slopes; fair grazing land.

SEC. 9, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$.—Rocky hill on east falling to west and rising to rocky hill on west from 1,440 to 1,750 feet above river; pond and mud flat between hills partly in each quarter, difficult to irrigate; alkaline soil, sandy clay loam, some gravel in places; very thinly covered with bull pine and fir to 30 inches, averaging 12 inches, of some timber value; 25 per cent farm value; fair grazing.

SE. $\frac{1}{4}$.—Rolling bench land; slopes on south steep and rocky, from 1,475 to 1,870 feet; partially suitable for cultivation; difficult to irrigate; soil, sandy clay loam; thinly covered with bull pine and fir to 30 inches, averaging 15 inches, small fir some poplar, of fair timber value; 25 per cent farm value; grazing.

SEC. 10.—Greater part of section on steep slopes, rocky to south part; rocky hill in N. $\frac{1}{4}$ from 1,100 to 1,940 feet above river; a few small benches; a small area of land near small pond in SW. $\frac{1}{4}$ and also in NE. $\frac{1}{4}$ to SW. of Tree lake, difficult to irrigate; soil, sandy clay loam; fir principally and some bull pine to 30 inches averaging 12 inches, of fair timber value, small bushy fir and pine, poplar and willow; 25 per cent farm value; grazing fair; water in lake very alkaline.

SEC. 11.—Rolling slopes with small benches rising from Tree lake in NW. corner; from 1,260 to 2,260 feet above river; suitable for cultivation in small patches, particularly in SE. and NW. $\frac{1}{4}$'s, two small spring creeks rise in NE. $\frac{1}{4}$, very little water; soil, sandy clay and black loam; open for most part, clumps of poplar and fir; bull pine and fir to west up to 30 inches, of fair timber value; 25 per cent farm value; good grazing land, bunch grass.

SEC. 12, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Bench land rolling; high rock bluff on east and high hill to NW., from 1,675 to 2,700 feet; small parts to west suitable for cultivation; dry, difficult to irrigate; small creek rises in NE. $\frac{1}{4}$, very little water; soil, clay loam and black loam; open to west, bull pine and fir, scrubby to east and small fir, poplar; 25 per cent farm; good grazing land.

NW. $\frac{1}{4}$ SW. $\frac{1}{4}$.—Rolling bench land, steep, rough slopes to north, from 1,525 to 2,380 feet; partially suitable for cultivation; dry, difficult to irrigate; soil, clay loam and black loam; open country, small clumps of poplar and some fir; 25 per cent farm; good grazing land.

SEC. 13, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Rough hilly bench land from 1,050 to 2,025 feet above river; rocky in part to north and south; pieces of land in places suitable for cultivation; dry, would be difficult to irrigate, small creek.

SEC. 13, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, S.W. $\frac{1}{4}$.—Through SE. $\frac{1}{4}$, very little water; soil, black loam and clay loam; open to SW., scattered fir and bull pine, small fir and willow brush; 25 per cent farm value, good grazing in places.

SEC. 14.—Rolling bench land, slopes rising to SE. and to west to rocky hill, from 960 to 1,210 feet above river; considerable part suitable for cultivation; very dry, no apparent supply of water, part of Tree lake in SW. corner and a small pond to SW., very alkaline; soil, clay loam; open to south and SE., scattered bull pine and fir to 30 inches, averaging 12 inches, small bushy pine and fir; 40 per cent farm value, fair grazing land.

SEC. 15, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Steep, rough, rocky slopes rising to SE. from Campbell Creek valley, from 600 to 1,400 feet above river; no land of agricultural value, very small area of land in bottom of valley in NE. $\frac{1}{4}$; soil, sandy clay loam with rock and gravel in creek bottom; fir and some bull pine on hills to 25 inches, averaging 12 inches, of some timber value; land in valley 75 per cent farm, fair grazing land.

SEC. 16, Part NE. $\frac{1}{4}$.—Rock slopes rising to north from Campbell Creek valley, and steep slopes to south, from 690 to 1,100 feet above river; small area of land along river suitable for cultivation; soil, black loam and clay loam and rock; fir on hills to south to 15 inches, a few scattered bull pine and fir among rocks to north; 75 per cent farm value, some grazing.

SEC. 16, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$; SEC. 17, SE. $\frac{1}{4}$, (S. $\frac{1}{2}$); SW. $\frac{1}{4}$ (L.S. 3).—Steep, rough slopes rising to south from Campbell Creek valley, from 740 to 1,600 feet above river; no land of agricultural value; soil, clay loam, rocky in part; fir and a few bull pine to 25 inches averaging 10 inches, of some timber value; some grazing.

SEC. 17, PART NW. $\frac{1}{4}$.—Very steep rock slopes rising to NW. from 800 feet upwards, of no value; a few scrubby bull pine; not much grass.

SEC. 20.—Slopes rising to west from 1,175 to 1,800 feet and upwards above river; slopes very steep, rough and rocky on east; no land of agricultural value; soil, sandy clay loam, gravel; thinly covered with fir and bull pine to 20 inches, scrubby and small fir, poplar and willow; some grazing in places.

SEC. 21, SW. $\frac{1}{4}$.—Narrow valley with steep slopes rising to east and west, rocky, from 960 to 1,470 feet above river; partially suitable for cultivation in valley; dry and very difficult to irrigate; soil, sandy clay loam; bull pine and fir to 25 inches, averaging 12 inches, small fir, poplar and willow, some timber value; 25 per cent farm value, some grazing; cancelled homestead.

SEC. 21, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$; SEC. 22, Part NW. $\frac{1}{4}$, Part SW. $\frac{1}{4}$.—High, rocky hill covers greater part, rising from Campbell creek on east and falling to small valley on west, summit in SE. sec. 21 from 600 feet to 1,600 feet above river; might be cultivated in parts, but no water; soil, sandy clay; on east slopes practically no bush; scrubby fir and bull pine in places; on west slopes bull pine and fir to 25 inches, averaging 10 inches, of some timber value; fair grazing land; NE. $\frac{1}{4}$ sec. 21 cancelled homestead.

SEC. 23, NE. $\frac{1}{4}$ (E. $\frac{1}{2}$).—Bench land, rolling, from 660 to 835 feet above river; small lake about 12 acres near centre; steep slopes rising to east; considerable part could be cultivated; water rights on lake taken; very dry, requires irrigation; soil, sandy loam, some gravel to east; open, land 40 per cent fruit value.

NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Rocky hill covers NW. $\frac{1}{4}$ running back through SW. $\frac{1}{4}$, partially suitable for cultivation, particularly in SW. $\frac{1}{4}$; from 660 to 1,100 feet above river; very dry and very difficult to irrigate; soil, sandy loam and clay, stony; open, some fir and bull pine to south, no timber value; good grazing.

SEC. 24, NE. $\frac{1}{4}$.—Rough rock hill covers quarter from 750 to 1,400 feet above river; no agricultural value; open, with a few small scrubby fir, pine and poplar; some grass in places.

SE. $\frac{1}{4}$.—Bench land in centre with steep rocky slopes rising to north and south, from 900 to 1,330 feet above river; considerable suitable for cultivation, but very

dry and no water available; soil, light clay loam; open, 35 per cent farm value; good grazing

SEC. 25, NE. $\frac{1}{4}$.—Bench land, rolling, from 250 to 740 feet above river; Campbell creek across NW. corner; deep ravine with very steep sides; partially suitable for cultivation; very dry and no water available; soil, very sandy clay loam; very scattered bull pine and fir to 30 inches, not of timber value; land 35 per cent fruit value; some grazing.

SEC. 25, PART NW. $\frac{1}{4}$; SEC. 26, NE. $\frac{1}{4}$ (L.S. 9).—Bench land, broken by ravine of Campbell creek; partially suitable for cultivation; very dry, possible to irrigate from Campbell creek, but no water available; soil, sandy clay loam; open, some grazing; recently, cancelled.

SEC. 27, NE. $\frac{1}{4}$.—Bench land, steep slopes on north rising to level bench on summit, from 580 to 1,000 feet above river; considerable land on summit suitable for cultivation, but very dry and not possible to irrigate; soil, light clay loam; open, a very few scattered bull pine; land of doubtful fruit value; grazing land.

Part SE. $\frac{1}{4}$.—High, rocky hill with very steep slopes rising from Campbell creek, from 640 to 1,100 feet above river; of no agricultural value; open; a few scrubby bull pine and fir; some grazing.

SEC. 28, NE. $\frac{1}{4}$ (S. $\frac{1}{2}$), SE. $\frac{1}{4}$.—Bench land, on hill running out to north, slope falling gently to north and to east and west, from 650 to 1,200 feet above river; partially suitable for cultivation; no water for irrigation; of very doubtful value; soil, light clay loam and some gravel; open to north, a few scrubby bull pine and fir to south; good grazing land.

NW. $\frac{1}{4}$.—Bench land rolling gently, steep slopes on south, 450 to 1,010 feet; considerable part suitable for cultivation; dry, small spring creek from west, not sufficient for irrigation; soil, light clay loam and some gravel; open, good grazing; John Frank, squatter.

SEC. 29, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Very steep rock slopes rising to west, from 540 to 1,700 feet and upwards; small area of bench land and land on gentle slopes in east part; very dry, small spring creek in NE. $\frac{1}{4}$; land of doubtful agricultural value; soil, light clay loam, stony; open, some fir and bull pine in places; grazing poor.

SEC. 33, NW. $\frac{1}{4}$.—Bench land, broken by deep gullies with steep clay banks, from 200 to 600 feet above river; no agricultural value; partially open, some scrubby bull pine and fir, small fir, pine and poplar, no timber value; some grazing.

NE. $\frac{1}{4}$, SE. $\frac{1}{4}$ (N. $\frac{1}{2}$).—Bench land, rough and broken to north, from 200 to 600 feet above river; considerable land suitable for cultivation; very dry and no water for irrigation; of doubtful value for fruit; soil, light clay loam and gravel; thinly covered with bull pine and fir to 20 inches; small fir and pine of some timber value; some grazing.

SEC. 34, NW. $\frac{1}{4}$.—Bench land, broken by deep gullies, from 125 to 500 feet above river; pieces of fairly level land to south suitable for cultivation; very dry, very difficult to irrigate; of doubtful value as fruit land; soil, light clay loam; thinly covered with bull pine and fir to 20 inches and small bushy pine and fir, of some timber value; some grazing.

Part NE. $\frac{1}{4}$, Part SE. $\frac{1}{4}$.—Bench land on fairly steep slopes, broken by ravines and deep gullies, from 125 to 730 feet above river; possible to cultivate in places, of very doubtful value; no water for irrigation; soil, light clay loam; open, a few bull pine and fir to west and small bush and fir in places; some grazing.

Tp. 20, R. 16, W. 6th Mer. *R. D. McCaw, D.L.S., 1909.*

SEC. 1 (FRAC.)—Rolling slopes in north part and steep rough broken slopes in south part, 250 to 700 feet above the South Thompson river; soil fine loam and silt; a few scattering bull pine, but generally open; 50 per cent fruit land in places; scant

grazing; and an experimental station is located on this section, in order to determine the success of dry cultivation in farming in this very dry district.

SEC. 2 (FRAC.).—Rolling slopes, rocky, broken and steep in south part and rather steep on west side, 200 to 900 feet above the South Thompson river; sandy loam, stony in parts; generally open land with a few scattering bull pine and fir; north part is 50 per cent fruit land and south part is scant grazing land; irrigation is likely needed but very difficult to obtain.

SEC. 3 (FRAC.).—High rocky knoll with scant grazing on north, east and west; very steep on south side.

SEC. 4, NE. $\frac{1}{4}$ (FRAC.).—Land is much broken by precipitous light clay slopes, 25 to 185 feet above the South Thompson river; soil light clay and sandy loam; a few scattering bull pine and fir; parts have 75 per cent value as fruit land; irrigation could be obtained by pumping from the river or by gravity from creek to the east.

SEC. 8, SE. $\frac{1}{4}$; SEC. 9, S. $\frac{1}{2}$.—Sloping bench land much broken in places, 200 to 625 feet above the South Thompson river; sandy loam and light clay usually stony; a few scrubby fir and bull pine; 50 per cent fruit land; irrigation is difficult to obtain in sufficient quantity.

SEC. 8, NE. $\frac{1}{4}$ (FRAC.); SEC. 9, N. $\frac{1}{2}$; SEC. 10, NW. $\frac{1}{4}$ (FRAC.); NE. $\frac{1}{4}$ (FRAC.).—A ridge runs through these quarters in an east and west direction, with steep broken slopes falling to north and south, altitude from 560 feet and upwards above the South Thompson river; south slopes are rather rocky and have scattering fir and bull pine of poor value; north slopes are generally open; all fair grazing.

SEC. 10, SW. $\frac{1}{4}$.—Much broken but has some small areas of bench land 460 to 550 feet above the South Thompson river; soil light clay and loam; a few scattering fir and bull pine trees of low value; parts have 50 per cent value as fruit land; scant grazing land.

SE $\frac{1}{4}$.—North half workable slopes; south half has greater part on steep rocky hillside, 460 to about 1,000 feet above the South Thompson river; soil, light clay and loam, stony in places; bull pine to 24 inches diameter with some scattering jack pine and fir; 50 per cent fruit land in parts, needing irrigation which could be obtained in part from creek running through the quarter; fair grazing land.

SEC. 11 (FRAC. S. OF LOTS 282 AND 283).—For the greater part workable slopes, 480 to 720 feet above the South Thompson river; soil, light clay and loam; some bull pine to 24 inches and a few jack pine and fir; 50 per cent fruit land, needing irrigation which may be difficult to obtain.

SEC. 12 (FRAC.).—Steep broken slopes rising to the NE., 500 to 1,750 feet above the South Thompson river; sandy loam and stone with rocky outcrops; generally open open, with a few scattered small bull pines; scant grazing land.

SEC. 13, S $\frac{1}{2}$.—Rough broken slopes and usually steep 1,010 to 1,750 feet above the South Thompson river sandy loam and stone with rocky outcrops; generally open land with some scattering clumps of fir and bull pine of poor quality; fair grazing land.

NW. $\frac{1}{4}$.—Slopes rising to the north gradual in the south and steep and rocky in the north, 1,010 feet and upwards above the South Thompson river; clay loam with a good deal of stone; open land in south part with fir and bull pine of possible value in the north; south part 25 per cent farm land, needing irrigation which is difficult to obtain.

SEC. 14, SE. $\frac{1}{4}$.—Rather rough and broken, rising on each side of creek flowing southwesterly, 875 to 1,260 feet above the South Thompson river; soil, stony, sandy loam; scattering bull pine in places, usually open land; part has 25 per cent value as farm land; irrigation likely needed and difficult to obtain as creek is very intermittent in flow; all fair grazing.

NE. $\frac{1}{4}$.—Steep broken slopes rising to north, of no utility for agriculture; scattering bull pine to 20 inches diameter, with scant grazing throughout. North part has probable timber value.

SEC. 14. SW. $\frac{1}{4}$; SEC. 11. (FRAC. N. OF LOTS 282 AND 283).—Rolling land broken in places and rising in steep slopes in sec. 14 and east part of sec. 11, 670 to 1,300 feet above the South Thompson; sandy loam soil; very stony; open land, with some scattering fir and bull pine of poor quality in north part; lower land has 25 per cent value as farm land, likely needing irrigation which is difficult to obtain; scant grazing throughout.

SEC. 15, S. $\frac{1}{2}$ (FRAC.); NW. $\frac{1}{4}$, NE. $\frac{1}{4}$ (S. $\frac{1}{2}$); SEC. 16, FRAC. NOT INCLUDED IN LOT 286; SEC. 17, E. $\frac{1}{2}$ (FRAC.); SEC. 20, E. $\frac{1}{2}$ (FRAC.); SEC. 21, SW. $\frac{1}{4}$ (FRAC.), SE. $\frac{1}{4}$, NW. $\frac{1}{4}$; SEC. 28, SW. $\frac{1}{4}$, NW. $\frac{1}{4}$ (W. $\frac{1}{2}$); SEC. 29, E. $\frac{1}{2}$ (FRAC.); SEC. 32, SE. $\frac{1}{4}$ (FRAC.); SEC. 33, SW. $\frac{1}{4}$ (W. $\frac{1}{2}$).—Generally steep broken slopes, often very rocky, altitude from 500 to over 2,000 feet above the South Thompson river in places; slopes are usually very stony and often strewn with broken rocks; on the higher slopes through sections 15, 21, 28 and 33, scattering fir and bull pine to 24 inches give possible timber value; lower land is usually open with a few scattered fir and bull pine of poor quality; poor to fair grazing is found throughout.

SEC. 32, NE. $\frac{1}{4}$ (FRAC.); SEC. 33, NW. $\frac{1}{4}$.—Generally workable slopes, broken in many places and rising steeply in east part of NW. $\frac{1}{4}$ of sec. 33, altitude from 1,400 to 1,800 feet above the South Thompson river; soil sandy loam; much open land with some scattered bull pine and fir to 24 inches diameter and small birch, poplar and willow, some cottonwoods to 3 feet diameter; part is 30 per cent farm land needing irrigation which could possibly be obtained from Louis lake; fair grazing throughout. (Fraction not included in the report of 1909.)—*R. D. McCaw, D.L.S., 1910*

The area consists of a broken hilly mass, useless for agriculture, and parts rise to over 4,000 feet in altitude. Much rock exists and some slopes towards Paul lake are composed of bare rock. Timber berth 442 extends into this township and includes north $\frac{1}{2}$ of sec. 27, sec. 34, and fractional secs. 35 and 36.

SECS. 14, NW. $\frac{1}{4}$; 15, L.S. 15, 16; 21, NE. $\frac{1}{4}$; 22, 23, 24.—This area has a general slope towards the south and south west, and has many precipitous rocky drops; the area is much broken, and rises to over 4,000 feet above sea; fir is scattering to 24 inches and of rather poor quality; a good deal of scrub growth exists and some jack pine on higher slopes; fair grazing.

SECS. 28 AND 33, (frac.) east.—Steep, broken slopes to the west and falling to Paul creek in sec. 33; good growth of timber consisting of fir to 24 inches, of poor value commercially; some jackpine and scrub; poor to fair grazing.

SECS. 25, 26, 33 AND 36 S. of Paul lake.—Semi-mountainous in character and falling with precipitous rocky slopes to Paul lake; much bare rock, and area very broken and hilly, parts over 4,000 feet; fir to 24 inches, of inferior quality, much scrub and jackpine; practically no grazing value.

SEC. 27.—General fall to the north and west; usually steep and broken, and of no possible agricultural value; some good fir to 24 inches, with much scrub and a good deal of windfall; poor grazing.

SEC. 34; SEC. 35 (FRAC. NORTH OF PAUL LAKE).—A broken, hilly area rising to over 3,000 feet in altitude; too much broken for value, many steep slopes; much fir to 24 inches, some larger, and a few bull pine, scrub and windfalls common; poor to fair grazing.

Tp. 21, R. 16, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

The west part of the Niskonlith Forest reserve occupies the east half north of the Kamloops Indian reserve, and is made up of a mountainous tract, with Lolo mountain being the high hill. Some of the lower slopes from the mountain have possible value as farm land, but the area is small and in the northwest corner in section 34, although the soil and surface is well adapted, the altitude makes the value agriculturally, very doubtful, as on land to the north along Edward creek of a similar altitude grains will not always mature. This year the oat crop was a failure and could be only used for hay feed. A narrow strip adjoining the reserve and to the west of it is also reported on herewith, to join the lands examined in 1909.

SEC. 1, SE. $\frac{1}{4}$.—Workable slopes falling south; stony, sandy loam; 2,800 to 3,300 feet above sea; probable farm value, but needs irrigation which could be obtained from small streams near by; fir and bull pine to 24 inches, some to 30 inches diameter of lumber value, some scrub; fair grazing.

NE. $\frac{1}{4}$.—South east corner has some workable slope, then rises steeply to the north west, 3,235 to over 3,600 feet above sea; stony, sandy loam; rather doubtful value, irrigation needed; fir and bull pine to 24 inches diameter, some to 30 inches, lumber value, some scrub; fair grazing.

SEC. 1, W. $\frac{1}{2}$; SEC. 2 (FRAC. N. of I.R.).—Steep broken slopes rising north, 2,800 to 3,925 feet above sea; no agricultural value; parts rocky; scattering fir and bull pine to 20 inches, some larger, likely lumber value; fair grazing.

SEC. 3, S. $\frac{1}{2}$; 4, NE. $\frac{1}{4}$; 9, E. $\frac{1}{2}$; 10.—Comprised of steep, broken, rocky slopes, often precipitous, falling from a hill 4,705 feet above sea in the south east $\frac{1}{4}$ of section 9; no agricultural land; north east $\frac{1}{4}$ of 10 is rolling, but over 4,000 feet in altitude; a good deal of fir to 24 inches diameter exists throughout, with some bull pine on the lower slopes, on higher slopes there is much small jack pine and balsam scrub with a few spruce in parts, much small scrub of various kinds, the lower slopes in south west $\frac{1}{4}$ of section 3 and southeast $\frac{1}{4}$ of section 4 are partially open; poor to fair grazing.

R. D. McCaw, D.L.S., 1909.—SEC. 4, SW. $\frac{1}{4}$ FRAC.; SEC. 5, SE. $\frac{1}{4}$ FRAC.—Rolling slopes from 1,650 to 1,800 feet above the North Thompson river; soil dark sandy loam, very stony in places; much open land with scattering willow and poplar clumps and a few fir up to 24 inches; 25 per cent farm value; irrigation might be obtained from Louis lake; steep slopes rise in east side of SW. $\frac{1}{4}$ sec. 4.

SEC. 4, NW. $\frac{1}{4}$ FRAC.; SEC. 5, NE. $\frac{1}{4}$ FRAC.—Rolling slopes from 1,820 to 2,000 feet above the North Thompson river; soil dark sandy loam, with much stone in places and rocky slopes in the NE. corner of NW $\frac{1}{4}$, sec. 4; open land with poplar and willow clumps and a few fir and bull pine up to 24 inches; 25 per cent farm value; irrigation might be obtained from Louis lake.

SEC. 8, NE. $\frac{1}{4}$ FRAC, SE. $\frac{1}{4}$ FRAC; SEC. 9, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Generally rather steep slopes rising from the Indian Reserve boundary, all over 1,950 feet above the North Thompson river; steep rock slopes in east part of the quarters in section 9; much open, some scrub with scattering fir and bull pine to 24 inches, of doubtful timber value; good grazing land.

R. D. McCaw, D.L.S., 1910.—SEC. 11, S. $\frac{1}{2}$.—Generally steep, broken slopes, often rocky, 3,755 to over 4,100 feet above sea; fir to 24 inches diameter, some jack pine with willow, alder and poplar brush, fir has probable lumber value; fair grazing

N $\frac{1}{2}$.—Rolling to the base of steep rise in northeast part, 4,080 to over 4,300 feet above sea; a few fir to 20 and 24 inches diameter, much jack pine sometimes to 15 inches, dense windfalls and scrub; poor grazing.

SEC. 12.—Broken, steep and rocky, 3,650 to 4,500 feet above sea; fir to 24 inches, becoming few in number to the north, jack pine, scrub, windfalls, timber value commercially is small; poor to fair grazing.

SEC. 13, 14; SEC. 15, E. $\frac{1}{2}$; SEC. 22, E. $\frac{1}{2}$; SEC. 23, 24—Mountain slopes rising high above 4,000 feet in altitude; very rocky; usually a thick growth of jack pine of small dimensions with some balsam and spruce, much scrub and windfall, some scattering fir to 24 inches on low slopes, no timber of merchantable value; not a grazing country.

SEC. 15, W. $\frac{1}{2}$; SEC. 22, W. $\frac{1}{2}$.—Rolling slopes, parts steep, broken and rocky, rising to the east, 3,530 to over 4,000 feet in altitude above sea; no agricultural value; much fir to 24 inches diameter, some larger, average 20 inches, of lumber value, jack pine and scrub, some windfalls; usually fair grazing.

SEC. 16 E. $\frac{1}{2}$.—Gently rolling slopes; 3,300 to over 4,000 feet above sea; light loam, often sandy; possible farm value, but would need irrigation which could be obtained from creek flowing through; fir to 20 inches diameter, some larger of value commercially, jack pine with much scrub, poplar and willows; poor grazing.

R. D. McCaw, D.L.S., 1909.—SEC. 16 NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Rough slopes in many places steep; rock outcrops throughout; soil, brown stony loam; altitude from 2,030 to 2,600 feet above the Thompson river; scrub and scattering fir to 36 inches, NW. $\frac{1}{4}$ much open; SW $\frac{1}{4}$ of fair timber value; fair grazing land.

SEC. 17, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$.—Rough broken slopes rising from 1,385 feet in NW. $\frac{1}{4}$ to 2,540 feet in NE. $\frac{1}{4}$, above the North Thompson river; many outcrops in sandy loam soil, open land generally with scattering fir and bull pine up to 36 inches and poplar clumps; grazing land.

SEC. 17, SW. $\frac{1}{4}$ (FRAC. WEST PART); SEC. 18, SE. $\frac{1}{4}$ (FRAC.).—Gently sloping land almost level, 1,600 to 1,675 feet above the North Thompson river; stony black loam with some rock outcrops; open land; 40 per cent farm value, needs irrigation which may be obtained from creek in SW. $\frac{1}{4}$ of sec. 17; rest part of SE. $\frac{1}{4}$ of sec. 18 is steep slope of grazing land.

SEC. 18, SW. $\frac{1}{4}$ (FRAC. WEST PART).—Almost level land, 1,480 to 1,550 feet above the North Thompson river; black loam 6 inches, stony loam subsoil; open land; 30 per cent farm value; irrigation needed but source doubtful.

SEC. 19, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Broken slopes falling to east into valley of small creek, 1,250 to 1,600 feet above the North Thompson river; soil, very stony open slope of loam; scant grazing; possible farm land in east part, irrigation needed and impossible to obtain without great expense.

NE. $\frac{1}{4}$, SE. $\frac{1}{4}$ (W. $\frac{1}{2}$).—Slopes to west broken in parts 1,250 to 1,600 feet above the North Thompson river; soil stony, rocky loam in east part, and black loam in small valley to west; generally open with some scrub and a few scattering fir; west part 60 per cent farm land, balance grazing, irrigation likely needed, but difficult to obtain.

SEC. 20, NW. $\frac{1}{4}$.—Small strip of level slightly swampy land between slopes rising to east and west, 1,385 to 1,600 feet above the North Thompson river; black loam in flat and stony rocky loam on slopes; much opening with scattering scrub and a few firs, spruce to 20 inches in level land; part 75 per cent farm land; slopes good grazing land.

SEC. 20, NE. $\frac{1}{4}$ (S. $\frac{1}{2}$), SW. $\frac{1}{4}$ (E. $\frac{1}{2}$), SE. $\frac{1}{4}$.—Slopes rising to east, generally steep and broken from 1,385 feet in SW. $\frac{1}{4}$ to 2,540 feet in SE. $\frac{1}{4}$, above the North Thompson river; much open with scattering scrub, and fir and bull pine up to 30 inches; good grazing land.

SEC. 21, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$; SEC. 28, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Broken slopes rising above the North Thompson river 2,065 feet; stony loam and much rock in places; NW. $\frac{1}{4}$ of sec. 21, and NW. $\frac{1}{4}$ and SW. $\frac{1}{4}$ of sec. 28 nearly all open, some scattering fir and bull pine in scrub; SW. $\frac{1}{4}$, sec. 21, fir up to 30 inches in thick scrub, also some bull pine, fair timber value; all fair grazing.

R. D. McCaw, D.L.S., 1910.—SEC. 21, E. $\frac{1}{2}$.—Rolling slopes, 3,470 to 3,630 feet above sea; sandy loam of poor value; worthless for farming; fir to 30 inches, but usually smaller, 20 inches being the average, small scrub, some jack pine, lumber value; fair grazing.

SECS. 25, 26; SEC. 35, SE. $\frac{1}{4}$; SEC. 36.—Slopes rising to Lolo mountain broken and steep; parts below 4,000 feet in altitude are useless for cultivation; a few fir to 20 inches diameter on lower slopes, with dense growth of alder, poplar, willow, spruce and patches of jack pine, running into much jack pine on high slopes, with some spruce and balsam, windfalls common, a few cedar and some cedar scrub in places on lower slopes; no grazing value.

SEC. 27.—Much steep mountain slope, northwest $\frac{1}{4}$ rather rolling, 3,715 to 5,000 feet in altitude above sea; fir to 24 inches and some to 30 inches, becoming more scattered on higher slopes, of value commercially, jack pine to 12 inches and some to 20 inches, much balsam, spruce scrub with some large trees, windfalls; practically no grazing.

SEC. 28, E. $\frac{1}{2}$.—Rolling in NE. $\frac{1}{4}$, and broken and hilly with steep slopes in SE. $\frac{1}{4}$,

3,470 to 3,860 feet above sea; no farm value; fir to 18 and 24 inches diameter, in scattering quantity, and of likely value, jack pine to 12 inches, some poplar and williy; poor grazing.

N.W. $\frac{1}{4}$.—Usually broken slopes, parts rolling, rise to 3,715 feet above sea; no farm value; fir and bull pine of poor quality, some scrub; fair to good grazing.

SEC. 29, NW. $\frac{1}{4}$; SEC. 30, NE. $\frac{1}{4}$.—Open rolling land 1,385 to 1,600 feet above the North Thompson river; black loam, stony in places with heavy clay loam subsoil; 30 to 50 per cent farm value; irrigation needed for success; possible source, Hefferly creek.

R. D. McCaw, D.L.S., 1909.—SEC. 29, SE. $\frac{1}{4}$.—Broken slopes rising towards east from 1,600 to 2,500 feet above the North Thompson river; stony loam, often rocky; scattering fir and bull pine, and scrub over open land; good grazing land.

SEC. 29, SW. $\frac{1}{4}$.—Generally open, broken slopes from 1,535 to 1,600 feet above the North Thompson river; stony loam with rock in places; scattering bull pine, fir and scrub; parts 30 per cent farm value; irrigation needed; all fair grazing.

SEC. 30, SW. $\frac{1}{4}$.—Open rolling slopes from about 1,300 to 1,600 feet above the North Thompson river; soil, black loam, rather stony; much workable land towards east; 35 per cent farm value; irrigation needed, but difficult to obtain.

SEC. 30, SE. $\frac{1}{4}$.—Open broken slopes in east falling into small valley on west side, 1,300 to 1,665 feet above the North Thompson river; stony black loam in valley; 50 per cent farm value, needing irrigation, which is difficult to be obtained; E. $\frac{1}{2}$ grazing land.

SEC. 30, NW. $\frac{1}{4}$.—Rolling slopes from 1,300 to 1,660 feet above the North Thompson river; sandy loam, very stony in parts; fir and bull pine scattering on the west side; 25 per cent farm value; needs irrigation, which is difficult to obtain.

SEC. 31, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$, SW. $\frac{1}{4}$, SE $\frac{1}{4}$.—Rolling slopes broken in places, 1,340 to 1,660 feet above the North Thompson river; dark sandy loam, stony in places; generally open with some scattering fir and bull pine; 40 per cent farm value, irrigation needed for successful growth, difficult to be obtained.

SEC. 32, SW. $\frac{1}{4}$.—Slopes broken in places, 1,385 to 1,500 feet above the North Thompson river; sandy loam soil, stony; open with scattering fir and bull pine; 25 per cent farm land; needs irrigation; possible source, Hefferly creek.

NW. $\frac{1}{4}$, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Broken slopes, rocky and steep, generally rising to high altitude above the North Thompson river; scattering fir, bull pine and scrub, much open land; fair grazing.

R. D. McCaw, D.L.S., 1910.—SEC. 33, W. $\frac{1}{2}$.—Rather steep slopes falling west and becoming broken, parts workable being at an altitude of 3,600 feet above sea; some good black loam to 3 and 6 inches, with light loam subsoil, stony; parts open with patches of poplar and willows, a few bull pine and fir; east part has farm value if altitude is not too high, irrigation is not likely required; good grazing.

E. $\frac{1}{2}$.—Rolling, 3,600 to 3,800 feet above sea; much open land with stony black loam soil; altitude makes it of doubtful farm value; some fir to 20 inches diameter, much poplar, some jackpine and bull pine; fair to good grazing.

SEC. 34, N. $\frac{1}{2}$.—Rolling, with a valley from northeast to southwest, 3,265 to 3,885 feet in altitude; much black loam soil, stony; altitude makes parts of doubtful farm value; some open land with poplar scrub and willows, some poplar to 12 inches, a good deal of fir to 24 inches diameter, some larger, a few bull pine; good grazing.

S. $\frac{1}{2}$.—Much workable land, parts broken, 3,600 to over 4,000 feet above sea; sandy loam, stony, of little value except along north part; no farm value except possible value along north part; fir to 36 inches, scattering but of likely value, jackpine and small scrub; poor grazing.

SEC. 35, NW. $\frac{1}{4}$.—Much workable slope; parts stony, broken, and steep; sandy loam, gravelly; 3,300 to over 4,000 feet above sea; west part has possible farm value.

but would require irrigation; brulé, covered with small fir, jackpine and scrub with windfall, a few large fir in northwest part; poor grazing.

SW. $\frac{1}{4}$.—Stony, broken slopes rising steeply to much over 4,000 feet above sea; a few fir to 36 inches, much jackpine and scrub, some brulé; poor grazing.

NE. $\frac{1}{4}$.—Parts gently rolling, becoming broken in the east and south; 3,600 to over 4,000 feet above sea; no farm value; much rock in parts; scrub poplar, alder, jackpine and spruce, some fir to 24 inches, much old brulé. windfalls; no grazing.

TP. 22, R. 16, W. 6th Mer. *R. D. McCaw, D.L.S., 1909*

SEC. 1, NE. $\frac{1}{4}$ FRAC.; SE. $\frac{1}{4}$ FRAC., NW. $\frac{1}{4}$.—Slopes rising from Hefferly lake, 2,200 feet and upwards above the North Thompson river; sandy loam, stony and rocky in places; scattering firs and jack pine in places of doubtful value, much scrub and some open slopes; fair grazing land.

SEC. 2, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$.—Sloping land and broken in places towards Hefferly creek, on north side; altitude from 1,800 to 2,230 feet above the North Thompson; scattering fir up to 24 inches in dead timber and scrub, brulé in places, south of Hefferly creek, steep wooded slopes arise.

SEC. 5, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Steep, rocky, broken slopes, from 1,600 to 2,200 feet above the North Thompson river; fir up to 30 inches in scrub, much of good lumber value; fair grazing land.

NW. $\frac{1}{4}$.—Gradual slope in NW. corner rising with steep rocky, broken slopes, 1,380 to 2,200 feet above the North Thompson river; soil in NW. corner, black loam 6 inches, stony, grey loam subsoil; 50 per cent farm land, irrigation ditch runs through; slopes are timbered with fir up to 30 inches, of fair value.

SEC. 6, SE. $\frac{1}{4}$, NE. $\frac{1}{4}$ (S. $\frac{1}{2}$).—Rolling slope rising towards east 1,340 to 1,660 feet above the North Thompson river; sandy loam, stony in places; much open land with fir and bull pine up to 30 inches diameter scattering throughout; 25 per cent farm value, needs irrigation, which is difficult to obtain.

SW. $\frac{1}{4}$.—Open rolling slopes, broken in places; sandy loam, some of it black, stony and rocky in places; scattering fir and bull pine to 24 inches in diameter; 25 per cent farm value, needs irrigation, which is difficult to obtain.

SEC. 7, NW. $\frac{1}{4}$.—Broken by steep slopes of Hefferly creek, small area of gradual slopes above the creek, about 850 feet above the North Thompson river; sandy loam soil, stony; 40 per cent fruit land on gradual slopes; irrigation may be obtained from Hefferly creek; in timber berth 291.

SEC. 8, NE. $\frac{1}{4}$.—Rough broken slopes rising to north, 1,300 to 1,800 feet above the North Thompson river; soil, sandy loam, very stony and rocky; bull pine and fir up to 30 inches in small growth, fair lumber value; fair grazing lands; in timber berth 291.

SEC. 10, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$.—Generally irregular and broken slopes rising from 1,795 feet above the North Thompson river, towards Edwards mountain; soil, very stony, sandy loam; timber consists of fir and bull pine up to 24 inches diameter, of profitable value; fair growth of grass gives grazing value.

SEC. 11, SW. $\frac{1}{4}$.—Rolling slopes broken in places, 1,965 to 2,130 feet above the North Thompson river; soil, sandy loam, stony generally; timber is fir, jack pine and bull pine up to 24 inches diameter, of possible timber value, scrub; much of land of possible farm value; fair grazing.

SEC. 15, SW. $\frac{1}{4}$.—Rolling slopes to Edwards creek which flows southerly through the quarter; 2,000 to 2,150 feet above the North Thompson river; sandy loam, stony in parts; fir and bull pine to 36 inches and jack pine to 20 inches scattering through small scrub, hardly enough trees for lumber value; fair grazing quarter, parts of possible farm value.

NW. $\frac{1}{4}$.—Generally rough, rolling slopes to Edwards creek, which flows southerly through the quarter; 2,150 to 2,550 feet above the North Thompson river; soil, very

stony, sandy loam; poplar scrub with scattering fir and bull pine to 30 inches, of probable value for lumber; good grazing land, parts possible farm value.

SEC. 16, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Rough rolling land from 2,030 to 2,550 feet above the North Thompson river; soil, stony sandy loam with rock in many places; fir and bull pine up to 36 inches diameter scattered through poplar and willow scrub, timber of probable lumber value; parts of land workable but of doubtful agricultural value; fair grazing.

SEC. 17, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Generally steep slopes broken in places with rocky outcrops, rising in altitude from about 1,000 to 2,300 feet above the North Thompson river; soil is sandy loam and clay and very stony; timber throughout consists mainly of bull pine and scrub fir up to 24 inches in diameter, of low lumber value; parts of NW. $\frac{1}{4}$ and SW. $\frac{1}{4}$ have possible farm value; all fair grazing; in timber berth 291.

SEC. 18, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Rolling slopes broken in places from 900 to 1,200 feet above the North Thompson river; soil, sandy loam and stony in many places; rock outcrops in places along the east side; bull pine and fir up to 30 inches diameter scattered through scrub fir and bull pine; some open land; workable land distributed in small areas throughout, 30 to 50 per cent farm value; in timber berth 291; timber is rather low grade but of likely lumber value; irrigation could be obtained from Edwards creek.

NW. $\frac{1}{4}$.—Generally workable slopes 945 to 1,250 feet above the North Thompson; soil, sandy loam with black loam in places; stone appears in places; timber consists of bull pine and fir up to 30 inches diameter, the former being the majority, scrubby fir and bull pine with some poplar and willow scrub; 40 per cent farm value, irrigation could be obtained from Edwards creek; in timber berth 291, timber rather low grade but of likely lumber value.

SW. $\frac{1}{4}$.—Rolling slopes, broken in places; 800 to 1,000 feet above the North Thompson river; soil, sandy loam, stony in places; bull pine and a few fir up to 24 inches in diameter in scrub; 40 per cent farm value, SW. part 40 per cent fruit land, Edwards creek is a source of irrigation; in timber berth 291, timber rather low grade but of probable value.

SEC. 19, SW. $\frac{1}{4}$.—Much open land in N. part, rolling; 1,200 feet above the North Thompson river; soil, loam, much black loam, stony; south part timbered with bull pine and fir of poor quality; 60 per cent farm value, irrigation likely needed, source doubtful.

NE. $\frac{1}{4}$, NW. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Rough slopes running to summit at north, 1,000 feet and upwards above the North Thompson river; stony loam often rocky; no agricultural value; scattering bull pine and fir in poplar and willow scrub, timber worthless for lumber; scant grazing.

SEC. 20, NW. $\frac{1}{4}$; SEC. 29, SW. $\frac{1}{4}$ (S. $\frac{1}{2}$).—Slopes rising from Island Pond, steep and rocky on west side, some gentle sloping land around the pond, altitude of pond about 1,250 feet above the North Thompson river; dark loam, stony in places; open around Island Pond; slopes here scattering bull pine and fir also poplar scrub; 50 per cent farm value; slopes fair grazing.

SEC. 20, SW. $\frac{1}{4}$.—Rough broken slopes from 1,000 to 1,500 feet above the North Thompson river; stony, sandy loam, rocky in parts; bull pine and fir up to 36 inches in scrub, fair lumber value; scant grazing.

NE. $\frac{1}{4}$.—Rough, steep slopes falling from east with small workable slope in NW. corner; soil, sandy loam, stony; bull pine and fir scattering, scrub and open land, of possible timber value; all fair grazing.

SEC. 20, SE. $\frac{1}{4}$; SEC. 21, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$; SEC. 22, SW. $\frac{1}{4}$ (S. $\frac{1}{2}$); SEC. 28, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$; SEC. 29, NE. $\frac{1}{4}$ (E. $\frac{1}{2}$), SE. $\frac{1}{4}$ (E. $\frac{1}{2}$).—High plateau runs north through secs. 28 and 21 with steep slopes towards west and more gradual slopes towards Edwards creek on the east; altitude of plateau from 2,400 to 2,600 feet above the North Thompson river; slopes are very steep in SW. $\frac{1}{4}$, sec. 20, and east part sec. 29; stony sandy loam, rocky in places; timber is fir and some bull

pine with spruce and poplar in places much is of probable value, a good deal of small scrub exists in parts; grazing is scattered throughout; the east part of sec. 29 is very open and of no timber value.

SEC. 30, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$, SE. $\frac{1}{4}$, NE. $\frac{1}{4}$.—Steep, rocky, broken slopes to east and west having summit near centre of section; 1,400 to 1,900 feet above North Thompson river; NW. and SW. quarters fair number of bull pine and fir up to 36 inches, of probable timber value, much scrub in places and fair grazing throughout.

SEC. 31, SE. $\frac{1}{4}$.—Rather steep rocky slopes to north from 975 to 1,400 feet above the North Thompson river, small flat in NW. corner; soil sandy loam and stony; bull pine and fir up to 36 inches scattered through scrub poplar fir and bull pine, very low lumber value; scant grazing land; flat is 30 per cent farm land, irrigation from Sullivan creek.

SW. $\frac{1}{4}$ (W. $\frac{1}{2}$).—Small area of bench land in NW. corner rising in steep slopes to the SE., 750 to 1,000 feet above the North Thompson river; sandy loam, very stony, boulders; bull pine and fir in scrub; NW. part of about 50 per cent fruit value; fair grazing, irrigation can be obtained from Sullivan creek.

NW. $\frac{1}{4}$ (W. $\frac{1}{2}$).—Broken by Sullivan Creek valley, benches on each side of creek, 665 to 750 feet above the North Thompson valley; sandy loam, stony with some boulders; fir and bull pine up to 24 inches of small value; parts 50 per cent fruit value, irrigation may be obtained from Sullivan creek.

NE. $\frac{1}{4}$.—Generally rolling and broken, 830 to 1,040 feet above the North Thompson; stony loam, black loam in places; NE. part open land; bull pine and fir of small value in scrub in SW. part; parts are workable but area small, so of doubtful farm value; fair grazing land.

SEC. 32, NW. $\frac{1}{4}$.—Open rolling land rising in slopes on east side, 995 to 1,375 feet above the North Thompson river; much black loam 6 inches, in parts stony, with light stony loam subsoil, stony loam on slopes; scattering bull pine to 20 inches in scrub in SW. corner; 30 to 65 per cent farm land, irrigation needed for successful growth, Sullivan creek a possible source.

SW. $\frac{1}{4}$ (N. $\frac{1}{2}$).—Open rolling land from 1,040 to 1,235 feet above the North Thompson river; soil black loam 6 inches, stony generally with stony loam subsoil; scattering bull pine to 24 inches in poplar scrub in SW. corner; 30 to 60 per cent farm land, irrigation needed for success, may possibly be obtained from Sullivan creek.

NE. $\frac{1}{4}$.—Broken stony loam slopes steep in places, 1,235 to 1,950 feet above the North Thompson river; open land with scattering poplar clumps; parts workable but need irrigation, which it is impossible to obtain; scant grazing land.

SEC. 33, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Plateau through NE. and SE. quarters with steep slopes rising east through SW. quarter, 1,720 to 2,500 feet above the North Thompson river; small area of flat land in NW. corner of SW. $\frac{1}{4}$; soil black sandy loam, rather stony; 25 per cent farm value; balance of land is stony sandy loam; fir up to 36 inches in places with poplar scrub and some jack pine, probable timber value in east half of section; fair grazing throughout.

SEC. 34, SW. $\frac{1}{4}$, NE. $\frac{1}{4}$ (S. $\frac{1}{2}$).—Gentle slopes towards Edwards creek, all over 2,400 feet above the North Thompson river; sandy loam soil with black loam adjoining the creek in parts; fir up to 30 inches, poplar and spruce to 20 inches in places, fair timber value, much scrub in places; fair grazing, along creek is some hay land.

R. D. McCaw, D.L.S., 1910.—The area in this township includes lands not reported on in the report of A. O. Wheeler, D.L.S., 1909, and consists of the eastern portion of the township and a small area in the southeast part.

SEC. 1, S. $\frac{1}{2}$ (FRAC.).—Rough broken slopes falling to valley of Hefferly creek, useless for cultivation; 3,100 to 3,565 feet above sea; stony and gravelly, rock outcrops; scrub poplar, willows, alder, and some cedar, some fir to 24 inches, windfalls; no grazing value.

SEC. 2, SW. $\frac{1}{4}$; SEC. 3, SE. $\frac{1}{4}$.—Generally rolling and broken, but having a part workable; slopes fall to a valley from northwest and southeast; altitude of workable

land 3,265 feet and upwards; value is very doubtful for farm land; sandy loam soil with some dark loam in places; fir to 18 inches with poplar, willow and some cedar and jack pine; southwest part of southeast $\frac{1}{4}$ is open land; poor to fair grazing.

SEC. 2, NW. $\frac{1}{4}$ (FRAC.); SEC. 3, N. $\frac{1}{2}$ (FRAC.); SW. $\frac{1}{4}$; SEC. 4; SEC. 9, SE. $\frac{1}{4}$, (FRAC.); SEC. 10, SW. $\frac{1}{4}$ (FRAC.).—This area is composed of a high mass with broken rocky slopes falling north and west, often precipitous; much rock throughout the area; no farm value; altitude 2,500 to 3,960 feet above sea; much open land in south $\frac{1}{2}$ of Sec. 4 and southwest $\frac{1}{4}$ of Sec. 3, with scrubby fir and bull pine, also scattering clumps of poplar and willows; rest of land is fairly well timbered with fir and bull pine, some to 36 inches with poplar and willow scrub; poor to fair grazing.

SEC. 11, N. $\frac{1}{2}$, SE. $\frac{1}{4}$; SEC. 12, 13, 14; SEC. 15, E. $\frac{1}{2}$; SEC. 22, E. $\frac{1}{2}$; SEC. 23 to 26; SEC. 27, E. $\frac{1}{2}$; SEC. 34, E. $\frac{1}{2}$; SEC. 35, 36.—This area is composed of a high mass rising from the west and south to Edward mountain; no land of agricultural value exists therein; steep slopes, and broken rise soon attain over 4,000 feet in altitude; the entire area is covered with timber and scrub, in Sec. 12 there is a good deal of fir to 24 inches diameter with poplar and willows; the lower slopes are fairly rolling but so stony as to be useless for agriculture; on the lower slopes through the east halves of Secs. 15, 22, 27, and 34 there are scattering fir of probable value, on the higher slopes there is much scrub overgrowing old brulé especially in Sec. 11, 14 and 15, on the high land the growth is scrubby jack pine with alders, willows, and poplar in places, some spruce and balsam and windfalls; fair growth of pine grass but usually poor grazing value.

Tp. 23, R. 16, W. 6th Mer. *R. D. McCaw, D.L.S., 1909.*

SEC. 2, SW. $\frac{1}{4}$.—Slightly rolling land over 2,400 feet above the North Thompson river; soil sandy loam, stony in parts; fir and jackpine of low timber value, with a good deal of young poplar, much scrub, timber value low; fair grazing land.

SEC. 3, SW. $\frac{1}{4}$; NW. $\frac{1}{4}$; NE. $\frac{1}{4}$; SEC. 10, NW. $\frac{1}{4}$; NE. $\frac{1}{4}$; SW. $\frac{1}{4}$; SE. $\frac{1}{4}$; SEC. 11, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Plateau through greater part of Sec. 3, falling towards Sullivan creek in other sections; Sullivan creek flows westerly through N. $\frac{1}{2}$ of Sec. 10 and NW $\frac{1}{4}$ of Sec. 11; plateau is from 2,400 to 2,700 feet above the North Thompson river; slopes are generally steep and rough and often rocky; soil is sandy loam, usually stony; greater part is wooded with scattering fir up to 36 inches, some spruce, bull pine and poplar in scrub and windfalls, some brulé also exists in places, timber is of fair value; a good growth of grass gives grazing value in most parts.

SEC. 4, NE. $\frac{1}{4}$.—Rolling slopes rising in steep slopes on west side 1,585 to 1,950 feet above the North Thompson river; brown loam with some black loam in places, usually stony; scrubby, growth of poplar and fir with some trees of fair size; much open land; west part, much workable, 25 per cent farm land, requiring irrigation, which could with difficulty be obtained from Sullivan creek, east part grazing land.

SW. $\frac{1}{4}$.—Workable slopes usually, sometimes broken; 1,110 to 1,655 feet above the North Thompson river; black and brown loam usually stony; scattering fir and bull pine, also clumps of small poplar; irrigation necessary for successful growth, parts could be supplied with water from Sullivan creek; good growth of grass for grazing; 25 per cent farm land.

SEC. 5, NW. $\frac{1}{4}$; SEC. 6, NE. $\frac{1}{4}$.—Rough slopes rising to NW.; too stony and rocky for cultivation; bull pine and fir to 24 inches diameter scattering, much of timber has been cut; fair grazing; in Timber Berth 462.

SEC. 5, SE. $\frac{1}{4}$.—Rough slopes rising to NW.; altitude 720 to 1,000 feet above the North Thompson river; very stony, many boulders; doubtful farm value; bull pine to 36 inches diameter with some fir and poplar in Sullivan creek ravine, much timber has been logged, timber remaining, value fair; grazing throughout; in timber berth 462.

SEC. 6, SE. $\frac{1}{4}$.—Rough bench land, 600 to 800 feet above the North Thompson river; soil brown sandy loam, very stony and many boulders in N. $\frac{1}{2}$ which is of no

agricultural value, but has low grazing value, S. $\frac{1}{2}$ is not so stony and of about 25 per cent fruit value, irrigation needed which may be supplied from Sullivan creek; timber is bull pine up to 36 inches and fir, much has been logged but some good timber is left, in timber berth 462.

NW. $\frac{1}{4}$.—Generally rough steep slopes, small bench, about 25 acres of sandy loam, altitude about 600 feet above the North Thompson river; scattering fir and bull pine of poor value; all fair grazing; bench, about 60 per cent of fruit land, needing irrigation, which might be supplied from Sullivan creek.

SEC. 8, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$, NE. $\frac{1}{4}$, (W. $\frac{1}{2}$); SE. $\frac{1}{4}$ (W. $\frac{1}{2}$).—Steep slopes rising from east side, often rocky, no agricultural value; scattering fir and bull pine up to 24 inches with a good deal of open land in places, timber is of doubtful merchantable value; fair grazing throughout.

SEC. 9, NW. $\frac{1}{4}$ (E. $\frac{1}{2}$).—Rolling land, 1,140 to 1,345 feet above the North Thompson river; soil, black and brown loam with clay loam subsoil; south part is rather broken slope; good fir up to 40 inches diameter grows throughout in much thick poplar and willow scrub; irrigation unnecessary; 75 per cent farm land.

SW. $\frac{1}{4}$ (E. $\frac{1}{2}$), SE. $\frac{1}{4}$ (W. $\frac{1}{2}$).—Rough rocky slopes, 1,200 to 1,700 feet above the North Thompson river; scattering fir and bull pine with clumps of poplar; good grazing land, but of no agricultural value.

SEC. 16, SW. $\frac{1}{4}$ FRAC.—Rolling land 1,140 to 1,350 feet above the North Thompson river; soil brown and black loam with clay loam subsoil; much open land, scrub in places, also a few fir and bull pine; 40 per cent farm value, parts need irrigation, which could be obtained from Sullivan creek.

SEC. 17, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Sides of high rocky ridges, a few broken slopes towards east, of no agricultural value; fir and bull pine, scattering, to 30 inches diameter, of possible value; very little grazing land.

NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Rather broken land, about 2,000 feet above the North Thompson river; stony, rocky loam; fir and a few bull pine to 30 inches diameter, of possible value; fair grazing land.

Tp. 16, R. 17, W. 6th Mer. *A. J. Campbell, D.L.S., 1909.*

SEC. 25, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$.—Rolling bench land from 2,440 feet and upwards above South Thompson river; slopes rising to SW., rough, no agricultural value; thick jack pine up to 10 inches, poplar, spruce, fir and willow brush with scattered fir up to 30 inches, averaging 10 inches, of timber value; some grazing.

SEC. 31, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$.—Bench land from 1,250 to 1,775 feet above river on divide between Napier and Stump lakes; rough, rocky slopes rising to west and rolling slopes to east; a few acres of low land between; small marshy pond lying partly in NE. $\frac{1}{4}$; considerable land suitable for cultivation; soil, black loam and sandy clay loam and gravel; no bush; 50 per cent farm land, requires irrigation; good grazing land.

SEC. 32, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$.—Very rolling bench land from 1,250 to 1,880 feet above river; rock outcropping in many places; land suitable for cultivation in small patches, not of much value; soil, black loam and clay loam; no bush, a few fir and pine and clumps of poplar in northwest part; good grazing land.

SE. $\frac{1}{4}$; PART SW. $\frac{1}{4}$.—Rolling bench land from 1,215 to 1,760 feet above river; Fraser creek runs in southwesterly direction through quarters, land to north of creek, rough and hilly with considerable solid rock showing in places, land to south of creek fairly level bench land, particularly in SE. $\frac{1}{4}$; fairly steep slopes falling to west; considerable part suitable for cultivation; soil, black loam and clay loam and gravel; no bush, 25 to 50 per cent farm value, might be irrigated from Fraser creek; good grazing land.

SEC. 33; PART NW. $\frac{1}{4}$.—Rolling bench land; slopes rising to north from Fraser creek, from 1,625 to 1,880 feet above river; rock outcropping in many places; not of much value; soil, clay loam and gravel; no bush; good grazing land.

PART SE. $\frac{1}{4}$; PART SW. $\frac{1}{4}$.—Gentle rolling bench land, from 1,625 to 1,885 feet above river; considerable part suitable for cultivation; dry, might be irrigated from Fraser creek if sufficient water; solid rock outcropping on slopes near creek; soil, black loam and clay loam; no bush, a few fir and poplar along creek; 25 per cent farm value; good grazing land; cancelled homestead.

SEC. 35, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Rolling bench land from 2,350 to 2,500 feet above river; slopes rising to north and south from Fraser creek in SE. $\frac{1}{4}$; considerable part of land could be cultivated, particularly to north of creek; elevation high; of doubtful farm value; soil, sandy clay loam; covered with jack pine to 10 inches, poplar and brush, scattered fir to 25 inches, averaging 15 inches, of timber value; fair grazing land.

NW. $\frac{1}{4}$, SW. $\frac{1}{4}$ (E. $\frac{1}{2}$).—Rolling bench land from 2,220 to 2,430 feet above river; slopes rising to north and south from Fraser creek near centre; considerable suitable for cultivation, good farm land if not too high; soil, black loam and clay loam; some jack pine, poplar and a few fir in places, but greater part open; 25 per cent farm value; good grazing land.

SEC. 36.—Gently rolling bench land from 2,320 to 2,750 feet; slopes rising to north from Fraser creek; considerable part could be cultivated; elevation high; soil, black loam in places and sandy clay loam; fir to 30 inches, averaging 15 inches, jack pine to 10 inches, poplar and brush, of timber value in NE., NW. and SW. $\frac{1}{4}$'s; in SE. $\frac{1}{4}$ considerable open space, good grazing land.

Tp. 17, R. 17, W. 6th Mer. *A. J. Campbell, D.L.S., 1909.*

SEC. 1.—Bench land, rough, hilly and rocky in NE. part, from 2,500 to 3,280 feet above river; gently rolling to south; no agricultural value; covered with fir, jack pine and a few bull pine up to 30 inches, averaging 10 inches, of timber value, and thick small jackpine, fir, poplar, spruce in places and brush; some grazing.

SEC. 2.—Bench land very rolling; rough and rocky to north; from 2,300 to 2,675 feet above river; possible to cultivate, of no agricultural value; open to SW.; fir to 30 inches, averaging 10 inches, of some timber value, small fir, jackpine, poplar and brush; good grazing on open spaces.

SEC. 3, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Bench land, very rolling, broken by gullies from 2,080 to 2,410 feet above river; solid rock outcropping in many places; no agricultural value; soil, black loam and sandy clay loam, some gravel; open country; small clumps of poplar in places; good grazing land.

NW. $\frac{1}{4}$, SW. $\frac{1}{4}$ (E. $\frac{1}{2}$).—Bench land, rolling gently, from 1,950 to 2,115 feet; considerable part fairly level and suitable for cultivation; dry, could be irrigated from Fraser creek if supply sufficient; soil, good black clay loam; open, good grazing land.

SEC. 4, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$; SEC. 9; SEC. 10, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$; SEC. 15; SEC. 16, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$; SEC. 22; SEC. 23, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Gently rolling bench land from 1,270 to 2,375 feet above South Thompson river; considerable part is fairly level bench land suitable for cultivation; to west of sec. 4, some solid rock outcropping, and SE. of NE. $\frac{1}{4}$ sec. 10, steep rocky slopes; if water could be obtained for irrigation, would make good farm land, no apparent supply; soil, sandy loam and black loam; beds of small creeks, two in sec. 9 and one in sec. 23, no water when examined; open country, a few clumps of small poplar and a few fir in places; land 50 per cent farm value; good grazing land.

SEC. 5.—Rough hilly bench land, steep slopes rising from Napier lake, from 1,095 to 1,880 feet; solid rock outcropping throughout section; ravine of Dropping Water creek through SW. $\frac{1}{4}$ with rocky banks; no agricultural value; soil, sandy clay loam and black loam; open country, a few scrubby fir and bull pine and small poplar and brush along creek and shore of lake; good grazing land.

SEC. 6, PART NE. $\frac{1}{4}$, PART NW. $\frac{1}{4}$.—Rough, hilly bench land, from 1,300 to 1,800 feet above river; a few acres of bench land suitable for cultivation to west of Dropping Water creek in NW. $\frac{1}{4}$, and a few acres to east partly in each quarter; dry, could be irrigated from creek, if water rights could be obtained; rocky hill on east; soil, clay loam and black loam, gravel in places; open country, some small poplar and a few scrubby fir and bull pine on hill to east; 50 per cent farm land; good grazing land.

SEC. 7, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$ (E. $\frac{1}{2}$).—High rocky hill, cliffs to south; from 1,300 to about 2,100 feet above river; no agricultural value; soil, clay loam and black loam; open country; some grass in places affording some grazing.

SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Some bench land along Dropping Water creek; rocky slopes to NE. from 1,440 to 1,800 feet above river; soil, black loam; a few clumps of poplar and brush along creek; 60 per cent farm land, requires irrigation; good grazing land.

SEC. 8.—Rough, hilly bench land from 1,095 to 1,605 feet above South Thompson river; steep slopes rising to west for 100 feet above Napier lake, with some level bench land and steep rocky slopes along west boundary; partially suitable for cultivation, requires irrigation; to east of Napier lake steep broken slopes rising directly from shore; no agricultural value; soil, black loam and clay loam; open country; 60 per cent farm value; good grazing land.

SEC. 10, SE. $\frac{1}{4}$; SEC. 11; SEC. 12; SEC. 13; SEC. 14; SEC. 23, SE. $\frac{1}{4}$; SEC. 24.—Bench land from 1,875 to 3,200 feet above river; steep slopes along west rising to east, greater part at elevation over 2,500 feet; considerable part of land could be cultivated but elevation too high; soil, sandy clay loam; covered with fir up to 30 inches, averaging 15 inches, a few bull pine in places, small poplar, some jack pine and brush, of good timber value; grass throughout timber.

SEC. 16, PART NW. $\frac{1}{4}$, PART SW. $\frac{1}{4}$.—Rolling bench land; in north part steep slopes rising from valley of Trapp lake; from 1,150 to 1,510 feet above river; partially suitable for cultivation, requires irrigation; soil, black loam and sandy clay loam; open country; 50 per cent farm value; good grazing land.

SEC. 17, PART NW. $\frac{1}{4}$; PART SW. $\frac{1}{4}$.—Rough, hilly, bench land, from 1,150 to 1,810 feet above river; solid rock outcropping in many places; steep slopes rising to west along west boundary; only suitable for cultivation in very small patches; soil, black loam and clay loam; open country; a few clumps of small poplar; good grazing land.

SEC. 18, NE. $\frac{1}{4}$; SE. $\frac{1}{4}$.—Rough, rolling bench land, from 1,550 to 2,100 feet above river; rough, rocky slopes along east and rocky knoll near NW. corner; some bench land to south of NE. $\frac{1}{4}$ and along west in SE. $\frac{1}{4}$ suitable for cultivation; rock outcropping in places; dry, requires irrigation, no water; soil, sandy clay and black loam; open country; 40 per cent farm value; good grazing.

SW. $\frac{1}{4}$.—Hilly bench land, from 1,820 to 2,050 feet above river; steep slopes; rock outcropping; rising from Dropping water creek on west; some fairly level bench land to east partially suitable for cultivation, dry, requires irrigation; soil, black loam and clay loam; open country; 40 per cent farm value; good grazing land.

SEC. 19, SE. $\frac{1}{4}$.—On steady slope falling to SE. from 1,770 to 2,180 feet above river; possible to cultivate, requires irrigation; soil, black loam; open country; 25 per cent farm value; good grazing land.

SEC. 20, NW. $\frac{1}{4}$; SW. $\frac{1}{4}$.—Steady slope rising to NW., gentle, from 1,475 to 2,150 feet above river; possible to cultivate, dry, and no water for irrigation; soil, black loam; rock outcropping in a few places; open country; 25 per cent farm value; good grazing land.

SEC. 21, NW. $\frac{1}{4}$ FR. NE. $\frac{1}{4}$ FR. WEST OF TRAPP LAKE.—Steep, rocky slope rising from shore of lake, from 1,080 to 1,900 feet above river; rock hill to centre of north boundary, falling to west; no agricultural value; soil, sandy clay loam and rock; a few scattered bull pine on hill and small pine, fir and poplar; good grazing land.

NE. $\frac{1}{4}$ FRAC EAST OF TRAPP LAKE, SW. $\frac{1}{4}$ FRAC.—On steep, rough slopes rising to east from Trapp lake, from 1,080 to 1,450 feet above river of no agricultural value; soil, sandy clay loam and some gravel; open country; a few fir to 20 inches and small fir and poplar in places along shore; grazing land.

SE. $\frac{1}{4}$.—Rolling bench land from 1,150 to 1,530 feet above river; steep slopes along west and NW. partially suitable for cultivation; dry, no water for irrigation; soil, black loam and sandy clay loam; open country; 50 per cent farm value; good grazing land.

SEC. 25, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Very rolling bench land from 2,150 to 2,775 feet above river; slopes to SE. steep, to NW. more gentle, partially suitable for cultivation, of very doubtful agricultural value; soil, sandy clay loam; covered with fir up to 30 inches, averaging 15 inches; small bushy fir, jack pine, poplar and willow brush, of timber value; fair grazing land.

SEC. 26, SE. $\frac{1}{4}$.—Very rolling bench land; from 1,775 to 2,150 feet above river; partially suitable for cultivation, particularly to west; dry, would require some irrigation; soil, black loam in places, sandy clay; greater part of quarter open country; some good fir up to 30 inches in SE. part, and small poplar and pine; 25 per cent farm value; good grazing land.

SEC. 27, SE. $\frac{1}{4}$, FRAC. SW. $\frac{1}{4}$.—Steep slopes rising from Trapp lake, from 1,080 to 1,715 feet above river; rolling bench land to SE., partially in SW. $\frac{1}{4}$ and covering greater part of SE. $\frac{1}{4}$, suitable for cultivation; dry, no water for irrigation; soil, black loam in places and sandy clay loam; open country; 50 per cent farm value; good grazing land.

FRAC. NE. $\frac{1}{4}$.—Steep slopes rising to east from Trapp lake, from 1,080 to 1,655 feet above river; rough and broken, no agricultural value; soil, sandy clay loam; open country; good grazing land.

FRAC. NW. $\frac{1}{4}$.—Steep rocky slopes rising to west from Trapp lake, from 1,080 to 1,490 feet above river; no agricultural value; open, good grazing land.

SEC. 28 NE. $\frac{1}{4}$, NW. $\frac{1}{4}$, FRAC. SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Steep, rocky slopes rising to west to rough, hilly bench land, from 1,080 to 2,175 feet above river; rock outcropping in many places on bench land; only very small patches of agricultural value; soil, black loam and sandy clay loam; a very few fir and some pine in places and clumps of poplar; good grazing land.

SEC. 29, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$ (N. $\frac{1}{2}$).—Rolling bench land, from 1,950 to 2,175 feet above river; hilly to north, solid rock outcropping in places; partially suitable for cultivation; soil, black loam and sandy clay loam; open prairie; a few scrubby fir and pine in places and clumps of small poplar; creek from Brigade lake runs through SE. $\frac{1}{4}$; 25 per cent farm value; good grazing land.

SEC. 32, NE. $\frac{1}{4}$, FRAC. NW. $\frac{1}{4}$, FRAC. SW. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Rough hilly bench land from 2,030 to 2,600 feet above river; slopes rising from Brigade lake on west to rock hill summit in NE. $\frac{1}{4}$; slopes rising from south to rock hill, rock outcropping in places; particularly in NE. $\frac{1}{4}$; considerable land suitable for cultivation, especially in SW. $\frac{1}{4}$; soil black loam and sandy clay loam; open prairie, a few fir and pine in places and some clumps of small poplar; 35 per cent farm value; would be better for irrigation; good grazing land.

SEC. 33, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Rough hilly bench land from 1,400 to 2,225 feet above river; very rocky, small rock hills and rock outcroppings in many places; land only suitable for cultivation in very small patches, not of much value; soil sandy clay loam with gravel in places; open prairie; some clumps of fir up to 20 inches and a few pine, a few small clumps of poplar; good grazing land.

NW. $\frac{1}{4}$.—Rolling bench land, from 2,050 to 2,350 feet above river; rock outcropping in a few places; partially suitable for cultivation, would require irrigation; soil, sandy clay loam with some gravel; open prairie, a few fir in places and a few clumps of poplar; 25 per cent farm value; good grazing land.

SEC. 34, NW. $\frac{1}{4}$, FRAC. SW. $\frac{1}{4}$.—Rough slopes rising to west from Trapp lake, from 1,080 to 1,800 feet above river; broken by deep gullies; of no agricultural value; soil,

light sandy clay; open prairie, a few fir and bull pine and small poplar in places; good grazing land.

FRAC. SE. $\frac{1}{4}$.—Steep slopes rising to east from Trapp lake, from 1,080 to 1,425 feet above river; no land of agricultural value; soil, light sandy clay and gravel; open; good grazing land.

SEC. 35, SW. $\frac{1}{4}$.—Bench land, from 1,270 to 1,705 feet above river; broken by valley of Fish creek along north and by valley of small creek from the south; some land to SW. part suitable for cultivation; soil, light clay loam, some gravel; open prairie, a few fir and thick small poplar in valley of Fish creek; 50 per cent farm value; good grazing land.

SEC. 36, NE. $\frac{1}{4}$ (S. $\frac{1}{2}$), SE. $\frac{1}{4}$.—Rolling bench land from 1,975 to 2,375 feet above river; slopes rising to SE. fairly steep on north and very rolling; partially suitable for cultivation, of doubtful value as agricultural land; soil, sandy clay loam and some gravel; fir and a few bull pine to 30 inches, averaging 15 inches, jack pine to 8 inches and small fir, pine and poplar, of timber value; fair grazing land.

SW. $\frac{1}{4}$.—Rolling bench land from 1,910 to 2,160 feet above river, on gentle steady slopes; suitable for cultivation, would require irrigation, no water; soil, sandy clay loam; west half, open; fir and a few bull pine to 30 inches, averaging 15 inches, jack pine to 8 inches, small fir, pine and poplar, of timber value, fair grazing land.

Tp. 18, R. 17, W. 6th Mer. *A. J. Campbell, D.L.S., 1909.*

SEC. 1, NE. $\frac{1}{4}$, PART NW. $\frac{1}{4}$, SE. $\frac{1}{4}$, PART SW. $\frac{1}{4}$.—Rocky hill covers this part of section, from 1,820 to 2,600 feet above the South Thompson river; steep slopes on west; of no agricultural value; soil, sandy clay; covered with fir and a few bull pine up to 25 inches, averaging 12 inches, and thick small fir, jack pine and poplar, of timber value, open to south and west in places; fair grazing land.

SEC. 2, NE. $\frac{1}{4}$ (W. $\frac{1}{2}$), PART NW. $\frac{1}{4}$, PART SW. $\frac{1}{4}$.—Rolling bench land, from 1,400 to 1,770 feet above river; very stony in places; partially suitable for cultivation; dry, difficult to irrigate; soil, black loam in places and sandy clay soil; small pond in NE. $\frac{1}{4}$; a few acres good land; no bush, a very few scattered fir and bull pine; 25 to 50 per cent value; good grazing land.

SEC. 3, PART NE. $\frac{1}{4}$.—Steep slopes rising to east from Campbell creek valley, from 1,100 to 1,770 feet above river; very rolling, no agricultural value, stony; soil, sandy clay and gravel; open, a few fir and small poplar on lowest slopes; good grazing land.

PART NW. $\frac{1}{4}$, PART SE. $\frac{1}{4}$, S. $\frac{1}{2}$.—Rocky slopes rising to west from Campbell creek valley, from 1,150 to 1,800 feet above river; no agricultural value; soil, sandy clay and gravel; open, a few fir and pine and small poplar scattered in places; good grazing land.

SEC. 4, NE. $\frac{1}{4}$.—Rolling bench land, from 1,660 to 2,220 feet above river; rocky ridge near centre with steep rocky slopes falling to east; fairly level bench land on top; to west and south; soil, black loam and sandy clay loam, stony in parts; open, a few clumps of poplar and a very few scattered fir and bull pine on slopes; 25 to 50 per cent farm value; would be better for irrigation; good grazing land.

SE. $\frac{1}{4}$.—Rolling bench land from 1,795 to 2,220 feet above river; rocky ridge along east, steep rough slopes falling to east, fairly level bench land to west of ridge; soil black loam in places and sandy clay loam; open, a few clumps of poplar and a very few scattered fir and bull pine; 25 to 50 per cent farm value; would be better for irrigation; good grazing land.

SEC. 9, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Rough rolling bench land from 1,660 to 2,305 feet above river; rock outcropping in many places; a few small patches of land in SW. part suitable for cultivation, not of much value; soil, black loam in places and sandy clay; open, clumps of poplar and a few fir and bull pine; good grazing land.

FRAC. SW. $\frac{1}{4}$.—Rolling bench land from 2,210 to 2,305 feet; rock outcropping in a few places, particularly to NE.; part of lake on west, poor water; considerable land

suitable for cultivation; settlers in this part do not irrigate, but land would be better if irrigated; soil, black loam; open country, a few clumps of poplar in places; 25 to 75 per cent farm value; good grazing land.

SEC. 10, FRAC. NE. $\frac{1}{4}$, NW. $\frac{1}{4}$.—Steep, rough slopes rising to east and west from Shumway lake, from 1,035 to 1,850 feet on west and from 1,035 to 1,660 feet above river on east; a few fir and bull pine and small bushy fir and poplar, particularly on steep slopes to east, no timber value; fair grazing land.

SEC. 11, NE. $\frac{1}{4}$.—Bench land from 1,880 to 2,250 feet above river; summit of hill near centre of quarter slopes falling in all directions, gentle; possible to cultivate a considerable part of quarter, of very doubtful value, very difficult to irrigate; soil, sandy clay loam and gravel; fir and bull pine to 30 inches, very thin to south and west, small bushy fir, some poplar, of timber value; grazing land.

NW. $\frac{1}{4}$.—Steep rough slopes generally rising to SE. from Shumway lake, 1,120 to 2,050 feet above river; some small benches to SE. could be cultivated, but very dry and no way to irrigate; soil, light sandy clay and gravel; open generally, a few scattered bull pine and fir, not of profitable timber value; good grazing land.

SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Bench land on gentle slopes from 1,660 to 2,035 feet, highest in north, slopes falling to east, south and west; suitable for cultivation, would be difficult to irrigate; soil, sandy clay and gravel; open for greater part, a few scattered bull pine and some fir to north; good grazing land.

SEC. 12, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Steep rough slopes rising to east from 1,810 to 2,550 feet above river, rocky to south; a small area of land in bottom of valley to west of NE. $\frac{1}{4}$, slopes of no agricultural value; soil, black loam in valley, sand clay on slopes; thick small jack pine and fir to 30 inches, poplar and brush of some timber value; land 50 per cent farm; grazing fair.

SEC. 12, SW. $\frac{1}{4}$.—Bench land, from 1,740 to 2,130 feet above river; steep rocky slopes in SE. part; low land around small lake, 15 acres in SW. part and strip of low land to north; soil, black loam and sandy clay loam; open spaces, bull pine and fir in places to 30 inches, and small poplar, of some timber value; 50 per cent farm value; good grazing.

NW. $\frac{1}{4}$.—Rolling bench land from 1,750 to 2,035 feet, on gentle slopes rising to NW., bottom of valley to SE. part a few acres good land; soil, black loam and sandy clay loam; open spaces to SE., bull pine and fir to 30 inches, averaging 15 inches, and small bushy fir and poplar, of some timber value; land 25 to 50 per cent farm land; fair grazing land.

SEC. 13, SEC. 14, SEC. 23, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$ (S. $\frac{1}{2}$); SE. $\frac{1}{4}$, SW. $\frac{1}{4}$; SEC. 24.—Steep slopes rising to east from Shumway lake and falling near eastern boundaries to small valley; to east of valley slopes very steep and rough; from 1,035 to 2,500 feet above South Thompson river; solid rock outcropping in parts, particularly to N. and W.; a very narrow strip of land in valley on east, not of much value; soil, black loam and sandy loam and gravel; open on west slopes, and partially open on north, fir and bull pine to 30 inches, averaging 15 inches, fir and some spruce in valley to east, small fir, poplar and brush of good timber value, especially in secs. 13 and 24; good grazing land.

SEC. 15, FRAC. NE. $\frac{1}{4}$, NW. $\frac{1}{4}$ (E. $\frac{1}{2}$), FRAC. SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Rough slopes rising to west from Shumway lake; from 1,035 to 1,855 feet above river; solid rock showing in many places; a few small benches, not of much value; soil, light sandy clay; open, a few small clumps of poplar; good grazing land.

SEC. 16, NW. $\frac{1}{4}$ (W. $\frac{1}{2}$), SW. $\frac{1}{4}$.—Rolling bench land, from 2,055 to 2,260 feet; gentle slopes rising to west; solid rock showing in a few places; considerable part suitable for cultivation, requires irrigation to some extent; open, a few scattered fir and bull pine of fair size and clumps of small poplar; 40 per cent value as farm land; good grazing.

SEC. 21, NE. $\frac{1}{4}$.—Hilly bench land, steep slopes on NE. part falling to Anderson creek, from 1,230 to 2,020 feet above river; very small portion suitable for cultivation;

soil, black loam; open, clumps of small poplar and fir, small poplar and brush on steep slopes to creek; good grazing land.

NW. $\frac{1}{4}$.—High hill, known locally as "Bald Hill," from 1,650 to 2,450 feet above river, covers whole of quarter; no agricultural value, rocky in places; soil, sandy clay loam; open, a few fir and pine on north slopes and small poplar; good grazing land.

SEC. 22, PART NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Rolling bench land from 1,230 to 1,810 feet above river; steep, rough slopes on north and NE. falling to Anderson creek, partially suitable for cultivation in SW. part; soil, sandy loam, stony in places; open country, a few fir, poplar and willow in valley of Anderson creek; 25 per cent farm value, requires irrigation; good grazing land.

FRAC. SE. $\frac{1}{4}$.—Steep rough slopes rising to east and west from Shumway lake, from 1,035 to 1,400 feet above river; no agricultural value; open, clumps of small poplar; good grazing land.

SEC. 25, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Steep broken slopes rising from valley of Campbell creek to east and south, from 1,010 to 1,910 feet and upwards above river; no agricultural value; soil, sandy loam; thinly covered with bull pine and fir to 20 inches, especially in SE. $\frac{1}{4}$, of timber value; open in SW. $\frac{1}{4}$; poor grazing land.

SEC. 26, FRAC. NE. $\frac{1}{4}$, FRAC. NW. $\frac{1}{4}$, FRAC. SW. $\frac{1}{4}$.—Rolling bench land and steep rough slopes rising to NW. from valley of Campbell creek, from 1,010 to 1,870 feet above river; rock outcropping in places to NW.; no agricultural value; soil, sandy loam; open, a few scattered bull pine and fir, scrubby, some small poplar; good grazing land.

FRAC. SE. $\frac{1}{4}$.—Steep, rough slopes rising to southeast from Campbell Creek valley, 1,010 to 1,650 feet above river; no agricultural value; soil, sandy loam, stony; open, good grazing land.

SEC. 27, SE. $\frac{1}{4}$.—Steep, rough slopes rising to north from Anderson creek valley, from 1,100 to 1,730 feet above river; broken by deep gullies, rock outcropping in places; no agricultural value; open, good grazing land.

NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Rolling bench land, from 1,150 to 1,730 feet above river; steep slopes to south falling to Anderson creek, rough and broken by deep gullies; some land to north of SW. $\frac{1}{4}$ and greater part of NW. $\frac{1}{4}$ suitable for cultivation, needs irrigation; soil, sandy loam; solid rock showing in a few places; open; 40 per cent farm value; good grazing land.

SEC. 28, NE. $\frac{1}{4}$.—Rolling bench land from 1,600 to 1,730 feet above river; greater part suitable for cultivation, needs irrigation; valley of Anderson creek in west part, gentle slopes; soil, black loam; open country; 40 per cent farm value; good grazing land.

SEC. 28, NW. $\frac{1}{4}$.—Very rolling bench land, from 1,650 to 1,900 feet above river; slopes fairly steep on west, partially suitable for cultivation; soil, black loam and sandy loam and some gravel; open for most part, some fir and bull pine on slopes to west; 40 per cent farm value; good grazing land.

SE. $\frac{1}{4}$.—Bench land from 1,230 to 1,720 feet above river; broken by deep ravine of Anderson creek; some land suitable for cultivation to north and NE. parts; soil, black loam and sandy loam, some gravel; open country, some fir and poplar and brush along valley of creek; 40 per cent farm value; good grazing land.

SEC. 29, SE. $\frac{1}{4}$.—Rolling bench land to SW. part, steep slopes, very rocky falling to NE. cover greater part of quarter, from 1,900 to 2,375 feet; partially suitable for cultivation; soil, black loam; covered with fir and a few bull pine up to 30 inches, averaging 15 inches, and small poplar and brush; land 25 per cent farm value; fair grazing land.

PART SW. $\frac{1}{4}$.—Rolling bench land from 2,200 to 2,310 feet above river; solid rock outcropping in a number of places, considerable part suitable for cultivation; soil, black loam; open to west, fir and a few bull pine to east up to 30 inches, averaging 15 inches, small poplar and brush; land 25 per cent farm value; good grazing land; cancelled homestead.

NW. $\frac{1}{4}$ (W. $\frac{1}{2}$).—Rolling bench land from 2,250 to 2,330 feet; considerable part suitable for cultivation; rough and rocky to north; soil, black loam; open, a very few pine, fir and small poplar; land 25 per cent farm value; good grazing land.

SEC. 31, NE. $\frac{1}{4}$.—Rolling bench land, from 1,980 to 2,375 feet above river; Anderson creek across NW. corner; steep slopes rising to SE., rocky ridge slopes falling to north and east; considerable land along north and SW. suitable for cultivation; soil, black loam and sandy loam; fir and some bull pine on north slopes up to 25 inches, averaging 15 inches, of some timber value, small poplar and brush; 25 per cent to 50 per cent farm value; good grazing. H. F. McInnis, squatter.

NW. $\frac{1}{4}$.—Steep slopes rising to NW. from Anderson creek, from 2,025 to 2,500 feet above river; steep, rising to SE. of creek, of doubtful agricultural value; soil, sandy loam; open on south slopes, a few bull pine and fir and small poplar to north; good grazing land.

SEC. 32, PART. NE. $\frac{1}{4}$.—Rolling bench land from 1,705 to 2,000 feet above river; rough and hilly to SW. of Anderson creek; partially suitable for cultivation; fairly level to NE., small area of meadow land in NE. corner; soil, sandy loam and black loam; some gravel in places; open, a few fir, poplar and brush along creek and some fir to SW. part; land 25 to 50 per cent farm value; requires irrigation, possible from Anderson creek; good grazing land.

SW. $\frac{1}{4}$ (W. $\frac{1}{2}$).—Rolling bench land, from 2,200 to 2,330 feet above river; solid rock outcropping in places; some land suitable for cultivation, would be difficult to irrigate; soil, black loam, sandy loam and gravel; open, a few scattered fir and some small poplar; land 25 per cent farm value; good grazing land.

SEC. 33, SE. $\frac{1}{4}$.—Rolling bench land, from 1,650 to 1,860 feet above river, Anderson creek across SW. corner; slopes rising to east; considerable part suitable for cultivation, requires irrigation, not sufficient water in Anderson creek for much irrigation; soil, black loam; open; 40 per cent farm value; good grazing land.

SEC. 35, SE. $\frac{1}{4}$.—Greater part on steep, rough slopes rising to NW. from Campbell Creek valley, from 1,150 to 1,925 feet above river; small area of bench land in NW. part suitable for cultivation; soil, sandy loam, stony in places; open, a few fir and pine on steep slopes; land 25 per cent farm value; good grazing land.

SEC. 36 NW. $\frac{1}{4}$ (W. $\frac{1}{2}$).—Very steep, rocky slope rising to NW. from Campbell Creek valley, from 1,400 to 1,930 feet above river; no agricultural value; a few fir up to 15 inches, averaging 8 inches on slope, a few pine and small fir; grazing in places.

SE. $\frac{1}{4}$.—Steep rocky slope rising to SE. to rock mountain from Campbell Creek valley, from 1,050 feet upwards; no agricultural value; a few scattered fir and pine and some small poplar in places; grazing in places.

Tp. 21, R. 17, W. 6th Mer. *R. D. McCaw, D.L.S., 1909.*

SEC. 7, SW. $\frac{1}{4}$.—East part low level bench land, west part rising in broken slopes to 450 feet above the North Thompson river; soil, fine silt; generally open with a few bull pine trees; lower part 75 per cent fruit land; irrigation easily obtained; slopes, grazing land.

SEC. 7, NW. $\frac{1}{4}$; SEC. 18, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$ (FRAC.).—Generally dry rough broken slopes and side hills; much rock and stone in places; soil, a sandy loam and clay; useless for agriculture, and of scant grazing value; a few scattered bull pine grow throughout, but land is nearly all open.

SEC. 13, FRAC.—Rising gradually into steep slopes towards west part, altitude 1,480 to over 2,000 feet above the North Thompson river; NE. $\frac{1}{4}$ and SE. $\frac{1}{4}$ workable, but very stony and dry; soil, dark sandy loam and clay loam; farm value is very doubtful; west part of NE. and SE. quarters open, balance of land has scattering fir to 24 inches, poplar and willow scrub, probable timber value; fair grazing.

SEC. 14, FRAC.; SEC. 15, FRAC.—Broken slopes rising in sec. 14 to the west and

falling in sec. 15 to the west, generally over 2,000 feet above the North Thompson river; soil, dark sandy loam, stony; rocky in places; fir to 28 inches diameter but not in great numbers, the west part of sec. 15 becomes quite open, timber of possible value in sec. 14 and west half of sec. 15, much scrub poplar and willow; fair grazing land.

SEC. 16, FRAC.; SEC. 21, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, NW. $\frac{1}{4}$ (E. PART), SW. $\frac{1}{4}$ (E. PART).—Broken slopes with some workable slopes in NE $\frac{1}{4}$ but very dry; sandy and clay loam, rocky towards the west; scattering scrub, poplar and some fir and bull pine; generally open land; no value for agriculture, but fair grazing exists throughout.

SEC. 17, SE. $\frac{1}{4}$ FRAC.—Worthless, broken rocky slopes.

SEC. 19, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Generally rough broken slopes 380 to about 1,300 feet above the North Thompson river; soil, stony clay and clay loam with a rocky hill in SE. $\frac{1}{4}$; open land with some scattering fir and bull pine; NW. part of SE. $\frac{1}{4}$ has small area of good farm land not likely needing irrigation; all scant grazing land.

SEC. 19, SW. $\frac{1}{4}$.—Broken open rolling slopes with a fair amount of workable land in central part, 700 to 1,200 feet above the North Thompson river; soil, clay loam in depressions and stony loam on slopes; a few scattering fir and bull pine; 25 per cent farm land, not likely needing irrigation; scant grazing on slopes.

SEC. 20 (FRAC. W. OF RIVER).—Steep broken slopes fall to North Thompson river; stony, gravelly clay; scattering fir and bull pine; scant grazing; a small strip of flat land extends through north part along river, but is very narrow and too small to be of value as fruit land.

SEC. 22 (WHOLE SEC.).—Generally rough, broken slopes from 1,590 to over 2,000 feet above the North Thompson river; many rock outcrops and very stony, sandy loam; very scattering fir and bull pine, and also poplar and willow scrub, parts open; fair grazing land.

SEC. 23 (WHOLE SEC.); SEC. 24 (WHOLE SEC.).—Rough slopes and plateaus with some gradual slopes 1,545 to 2,300 feet above the North Thompson river; soil generally a sandy loam, stony and rocky in parts; much of SE. and NW. quarters of sec. 24 and NE. $\frac{1}{4}$ of sec. 23 are open; very scattering fir in willow and poplar scrub, in SE. $\frac{1}{4}$ of sec. 23 and SW. $\frac{1}{4}$ of sec. 24, the fir is quite frequent up to 27 inches diameter and of likely timber value, S. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of sec. 23 and NW. $\frac{1}{4}$ of sec. 24 of possible farm value, but likely too high for successful farming; throughout is scattered a fair growth of grass for grazing.

SEC. 25, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Rough, broken slopes, very steep in places and rocky, altitude from 1,500 to 2,260 feet above the North Thompson; soil, sandy loam, unusually stony; fir and bull pine, scattered, to 30 inches diameter in parts; open land exists in places; fair grazing land; NE. $\frac{1}{4}$ of probable lumber value.

NW. $\frac{1}{4}$.—Rolling slopes broken in places; many workable slopes; sandy loam, parts stony; thinly scattered fir and bull pine; 25 per cent farm value; needs irrigation, which it is impossible to obtain.

SEC. 26 (WHOLE SEC.).—Much broken slopes from 885 to 2,230 feet above the North Thompson river; sandy loam, stony and rocky in places; fir and bull pine scattering, of inferior quality; fair grazing land.

SEC. 27, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Much broken slopes, 250 to 1,760 feet above the North Thompson river; soil, sandy loam, often stony and rocky; some scattering fir and bull pine, also poplar clumps; fair grazing land.

NW. $\frac{1}{4}$.—Broken slopes in places and a good workable slope running through, which is cultivated at present and irrigated; 250 to 500 feet above the North Thompson river; soil, sandy loam, stony in parts; has young orchard planted; James Armour says he has entry for this land, but Land Office does not show this to be the case; as it stands at present, 75 per cent fruit land.

SEC. 28, NE. $\frac{1}{4}$ FRAC., SE. $\frac{1}{4}$.—Steep slopes fall towards river; scrubby bull pine and fir; very scant grazing.

SEC. 28, NW. $\frac{1}{4}$ (FRAC. E. OF RIVER); SEC. 33 SW. $\frac{1}{4}$ (FRAC. E. OF RIVER).—Level land about 10 to 20 feet above the North Thompson; soil, fine silt and loam; poplar scrub, with much open land; liable to flood during high water; 50 per cent farm land.

SEC. 29, NW. $\frac{1}{4}$ FRAC., SW. $\frac{1}{4}$ FRAC.—Steep broken slopes falling towards river, 190 to 570 feet above the North Thompson river; much open land, with some scrubby bull pine; very scant grazing land.

SEC. 30, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Rolling, open land with steep slopes in north part of NW. $\frac{1}{4}$; 860 to 1,300 feet above the North Thompson river; light sandy loam, stony generally; parts about 35 per cent farm land; rather poor grazing land; irrigation needed and cannot be obtained conveniently.

NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Rolling slopes rising in steep slopes to the west, 435 to 1,150 feet above the North Thompson river; open land, with some scattering bull pine and fir of poor quality; west half, scant grazing land; east half 50 per cent fruit land, needing irrigation, which is difficult to obtain.

SEC. 31, NW. $\frac{1}{4}$.—Rough broken slopes 900 to 1,170 feet above the North Thompson river; soil, stony loam; fir and bull pine to 30 inches diameter, of fair value; south part is open; scant grazing.

SEC. 32, NW. $\frac{1}{4}$.—Sloping bench land, with steep broken slopes on east side; 360 to 825 feet above the North Thompson river; soil, light clay and sandy loam, stony; fir and bull pine scattering to 24 inches, much timber has been cut, and remainder is of small value; 50 per cent fruit land; needs irrigation, which could be obtained from creek flowing through the quarter.

SW. $\frac{1}{4}$.—Small area of bench land in NW. corner; steep broken slopes toward North Thompson river; soil, stony light clay and sandy loam; fir and bull pine of poor quality; bench land 50 per cent fruit value; needs irrigation, which might be obtained from creek through the north part of the section; slopes have scant grazing value.

SEC. 32, SE. $\frac{1}{4}$ FRAC., NE. $\frac{1}{4}$ FRAC.; SEC. 33, NW. $\frac{1}{4}$ FRAC.—Steep broken slopes rising to 690 feet above the North Thompson river; stony clay and clay loam; scrubby fir and bull pine, much open; scant grazing.

SEC. 34, SW. $\frac{1}{4}$ FRAC.—Rocky knoll, 460 to 550 feet above the North Thompson river; much open, with scrubby fir and bull pine, scattering; scant grazing.

SEC. 35, NE. $\frac{1}{4}$ FRAC.; SEC. 36, NW. $\frac{1}{4}$.—Slightly rolling slopes, becoming rather steep in SW. part; 500 to 1,200 feet above the North Thompson river; soil, sandy loam unusually stony; much open, with some scrubby fir and bull pine, also poplar clumps; lower parts about 25 per cent fruit land; needing irrigation, which may be difficult to obtain; rest of land is of fair grazing value.

SEC. 35, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Generally rough broken slopes rising towards SE., 600 to 1,760 feet above the North Thompson river; stony loam soil; fir and bull pine to 24 inches diameter, very much scattered; also poplar clumps; fair grazing value.

SEC. 36, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Broken slopes rising from 925 to 1,900 feet above the North Thompson river; very rocky; some open land, fir and bull pine to 30 inches diameter of fair quality and likely lumber value; scant grazing throughout.

SW. $\frac{1}{4}$.—Rolling slopes, broken and steep in places, 1,000 to 1,825 feet above the North Thompson river; soil, a sandy loam, often stony and rocky; some open land, scattering fir and bull pine to 30 inches diameter; very doubtful farm value; fair grazing land.

Tp. 22, R. 17, W. 6th Mer. *R. D. McCaw, D.L.S., 1909.*

SEC. 1, NE. $\frac{1}{4}$ (S. $\frac{1}{2}$), SE. $\frac{1}{4}$, SW. $\frac{1}{4}$ (E. PART).—Rolling slopes terminating in steep stony slope in SE. part; altitude about 900 to 1,500 feet above North Thompson river; soil, dark and light sandy loam, often stony; scattering bull pine and fir of poor value; much open land; lower parts 45 per cent farm value; balance fair grazing; irrigation needed, Hefferly lake a possible source.

SEC. 2, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$ (FRAC.), SE. $\frac{1}{4}$ (FRAC.); SEC. 3, W. $\frac{1}{2}$ (FRAC.)—Rolling slopes with small benches, broken in many places, rising in altitude from 140 to about 500 feet above the North Thompson river; soil, a sandy loam, stony; bull pine and fir very scattering up to 20 inches diameter, no lumber value; much open land, greater part has value as fruit land of about 30 per cent, with many parts where fruit would grow; irrigation is necessary, Hefferly lake a possible source.

SEC. 4, NW. $\frac{1}{4}$ (E $\frac{1}{2}$), SW. $\frac{1}{4}$ (FRAC.)—Broken slopes rising to 700 feet above the river; clay loam, gravelly and stony; scrubby fir and bull pine scattering through much open land; scant grazing.

SEC. 4, NW. $\frac{1}{4}$ (W. $\frac{1}{2}$); SEC. 5, NE. $\frac{1}{4}$.—Rolling bench land and slopes, stony loam; altitude 400 to 730 feet above the river; scattering growth of fir and bull pine to 18 inches diameter, of possible lumber value, some scrub; 25 to 50 per cent fruit land; needs irrigation; possible but difficult source, Macaulay creek.

SEC. 5, SE. $\frac{1}{4}$.—Broken slopes rising to 700 feet above the river; very stony; soil sandy and clay loam; fir and bull pine very scattered up to 20 inches on much open ground, possible timber value; scant grazing value.

NW. $\frac{1}{4}$.—Generally rolling slopes with some level land in south part, north part is very rough; altitude from 700 to 1,220 feet above the river; soil, sandy and clay loam, usually stony; scrubby growth of bull pine and fir; much open land; north half is grazing land, south half about 35 per cent farm land; irrigation necessary, but difficult to obtain.

SEC. 6, SW. $\frac{1}{4}$, SE. $\frac{1}{4}$, NE. $\frac{1}{4}$.—Rolling slopes from 825 to 1,575 feet above the North Thompson river; much broken land; soil is sandy and clay loam, with stone in many parts; generally open with scattering fir and bull pine up to 20 inches; many of slopes and valleys are workable, but need irrigation for successful growth; value as farm land about 25 per cent; fair grazing throughout.

NW. $\frac{1}{4}$.—Rolling slopes, broken, from 1,500 to 2,125 feet above the river; soil, stony loam, generally with some black loam and rock outcrops; much open with fir and bull pine in NW. part up to 20 inches, of probable timber value; SW. part contains many workable slopes, and has value of 25 per cent as farm land, but needs irrigation, which is difficult to obtain.

SEC. 7, SW. $\frac{1}{4}$, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$; SEC. 18, SE. $\frac{1}{4}$, NE. $\frac{1}{4}$ (FRAC.)—Steep, rolling slopes often rocky and broken, rising from 1,325 to 2,300 feet above the river; soil, sandy loam, stony; scattering fir and bull pine up to 20 inches, of probable timber value in west half of section but of little value in NE. $\frac{1}{4}$; all fair grazing; some land is open.

SEC. 8, SW. $\frac{1}{4}$.—Rolling slopes from 730 to 1,325 feet above the river; soil, stony, sandy loam with some surface black loam in north half; greater part open with scattering fir and bull pine of little value; north half would be about 30 per cent farm land; south half is very rough and has fair grazing value.

NW. $\frac{1}{4}$, NE. $\frac{1}{4}$.—Rough, broken slopes with scattering outcrops; altitude from 770 to 1,500 feet above the North Thompson river; scrubby fir and bull pine scattered over much open land; scant grazing.

SEC. 9, SW. $\frac{1}{4}$, NW. $\frac{1}{4}$.—Rolling and level bench land with broken slopes at north of NW. $\frac{1}{4}$ and also in SE. part of SW. $\frac{1}{4}$; altitude from 235 to 1,070 feet above the river; bench is about 770 feet above the river; soil, light clay and sandy loam, stony; fir and bull pine up to 18 inches rather scattering, of value as lumber; large area valuable as fruit land, 25 to 50 per cent; grazing throughout; irrigation needed, possible source, Macaulay creek.

NE. $\frac{1}{4}$ (FRAC.), SE. $\frac{1}{4}$, W. $\frac{1}{2}$.—Steep broken slopes towards river, with small bench in east part of NE. $\frac{1}{4}$, about 50 feet above the river; soil on bench gravelly and stony clay with same subsoil; of 50 per cent fruit value; needing irrigation; slopes have fair grazing, and have bull pine and fir up to 18 inches, of probable timber value.

SEC. 11, SW. $\frac{1}{4}$ (S. PART).—Low bench land and slopes from 140 to 300 feet above the river; soil, a sandy loam with stone; scattering small bull pine and fir of little value, a few large trees; should make 50 per cent fruit land if irrigated, irrigation could be obtained from Hefferly creek at small cost.

SEC. 12, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$ (N. $\frac{1}{2}$).—Broken slopes into Hefferly creek, steep and rocky in places, no farm or grazing value; fir and bull pine up to 20 inches of probable value.

SW. $\frac{1}{4}$.—North half, steep rocky slopes and sloping towards west, south and east; in south half, slopes become workable; altitude is from 750 to 1,135 feet above the river; soil is brown sandy loam and rather stony; fir and bull pine up to 20 inches with a few larger trees, of fair value; north half is grazing land, south half is 50 per cent farm land; irrigation needed for successful growth; Hefferly lake a possible source.

SEC. 13, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$ (S. $\frac{1}{2}$).—Fairly even slopes towards Hefferly creek; altitude from 700 to 800 feet above the North Thompson river; soil, fine sandy loam; bull pine and fir up to 30 inches scattering and of medium value; land has about 40 per cent fruit value; irrigation may be obtained from Hefferly creek. Donald Gordon squatted on SE. $\frac{1}{4}$. In timber berth 434.

SEC. 13, SE. $\frac{1}{4}$ (N. $\frac{1}{2}$), SW. $\frac{1}{4}$ (N. $\frac{1}{2}$), NW. $\frac{1}{4}$, NE. $\frac{1}{4}$.—Generally broken rocky slopes, and steep; altitude from 800 to 1,400 feet above the North Thompson; fir and bull pine scattering up to 30 inches, rather low value; fair grazing land. In timber berth 434.

SEC. 14, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Bench land along west side about 450 feet above the river, then rising on east into steep, broken rocky slopes; soil on bench is clay and sandy loam with gravel in subsoil in places; scattering fir and bull pine up to 24 inches, much of it scrubby, timber value rather low; bench is 50 per cent fruit land; irrigation might be obtained from Hefferly creek; balance of land is fair grazing. In timber berth 434.

SEC. 15, NW. $\frac{1}{4}$.—Cancelled homestead; east part broken slopes becoming gradual to the east and forming bench land; altitude from 100 to 525 feet above the river; soil sandy and clay loam; much open, with very scattering fir and bull pine up to 18 inches in diameter; 50 per cent fruit land; irrigation may be obtained from Jamieson creek.

SW. $\frac{1}{4}$.—Frac. south of river, cancelled after district was examined, no examination made.

SEC. 16, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$ (W. $\frac{1}{2}$).—Rough broken slopes rising to 1,015 feet above the river. In NW. corner of NE. $\frac{1}{4}$ some fair land of black loam soil exists, but area is very small; both quarters of really no farm value; bull pine and fir of inferior quality up to 18 inches diameter, possibly of low timber value; fair grazing lands; much of SW. $\frac{1}{4}$ of 16 is open.

SEC. 17, SE. $\frac{1}{4}$, NE. $\frac{1}{4}$.—Generally rough rolling slopes and broken, rising from 1,070 to 1,820 feet above the river; soil, stony loam with outcrops of rock in places; much open, with some scattering fir and bull pine of poor value; fair grazing land.

R. D. McCaw, D.L.S., 1910 (Fractional northwest part).—This part of the township is broken by the steep slopes to Jamieson creek. Two areas would likely be of farm value if irrigation could be applied. One area is in timber berth 440 on the summit between Jamieson creek valley and the North Thompson river valley. Water could be obtained from Jamieson creek but the expense would be great and the work difficult owing to steep slopes along the creek. The irrigation work would have to start north of the Railway Belt owing to the altitude. The other area is mainly in sections 19 and 20. In this case some water could be obtained from Macaulay and tributary creeks in Township 22, Range 18.

SEC. 18, W. $\frac{1}{2}$.—Steep slopes often rocky, falling to Macauley creek, which flows through, with rolling broken slopes 2,675 to 3,445 feet above sea; no farm value;

some good fir to 36 inches, but usually smaller, willows and poplar; some open land; poor grazing.

SEC. 19.—Generally rolling slopes with parts broken and rocky, 3,080 to 3,655 feet above sea; grey and brownish loam; of small farm value in northeast $\frac{1}{4}$ and south $\frac{1}{2}$ if water is applied; parts stony; small slough in northeast $\frac{1}{4}$ which is dammed for irrigation purposes; some good lumber, fir to 36 inches diameter and a few bull pine, much small fir, birch, poplar, and jackpine; fair pine grass grazing.

SEC. 20, NW. $\frac{1}{4}$.—Rolling and workable; 3,135 to 3,325 feet above sea; grey and brownish loam soil, not rich; poor farm value; needs irrigation; thick growth of small fir, birch and poplar with some fir to 36 inches; poor grazing.

SEC. 20, NE. $\frac{1}{4}$, L.S.'s 5 to 8; SEC. 21, L.S.'s 5, 6, NW. $\frac{1}{4}$.—Rolling slopes with a general slope to the west; often steep and rocky; much open land with patches of timber; 1,570 to 3,300 feet above sea; no farm value; soil is usually very stony loam, some black loam, gravelly; scattered fir and bull pine with thick growth on steep slope of Jamieson creek, northeast $\frac{1}{4}$ has lumber value, some of trees running to 48 inches diameter, much poplar, and willows in parts; scant grazing.

R. D. McCaw, D.L.S., 1909.—SEC. 20, SW. $\frac{1}{4}$, SE. $\frac{1}{4}$ (S. $\frac{1}{2}$).—Broken, rolling slopes from 1,365 to 2,240 feet above the North Thompson river; soil, loam of various kinds, with stone and some rock outcrops; open, with scattering fir and bull pine of poor quality; fair grazing land.

SEC. 21, SW. $\frac{1}{4}$ (S. $\frac{1}{2}$).—Open rolling slopes with gently rolling land in east part; soil, black loam with light subsoil, stony; a few scattering bull pine and fir to the west, of poor quality; about 50 per cent farm value; irrigation may be obtained from Jamieson creek.

SE. $\frac{1}{4}$.—Steep slopes broken by Jamieson creek; altitude 525 to 1,015 feet above the North Thompson; soil, generally sandy loam with flat of black loam in SW. corner, stony; fir and bull pine up to 18 inches of poor quality; SW. part about 50 per cent farm value; irrigation may be obtained from Jamieson creek; balance of quarter grazing land. Markam Gordon is squatted on SW. part.

SEC. 21, NE. $\frac{1}{4}$ FRAC.; SEC. 22, NW. PART OF SW. $\frac{1}{4}$.—Rolling slopes, steep in places toward Jamieson creek, rising to 965 feet above the river; soil, a sandy loam and stony; fir and bull pine to 20 inches diameter, of fair value; south half of NE. $\frac{1}{4}$ sec. 21 about 25 per cent fruit land; needs irrigation, which may be supplied by Jamieson creek; north half is scant grazing land.

SEC. 22, NW. $\frac{1}{4}$.—Rather rough slopes towards southeast; altitude from 195 to 965 feet above the river; soil, stony loam; scattering fir and bull pine up to 24 inches diameter, of fair timber value; L.S. 12 about 25 per cent fruit land; balance of quarter section scant grazing.

SEC. 23, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$ (FRAC.) E. OF RIVER.—Generally a steep rocky slope towards river with bench of sandy loam, with a gravelly subsoil in places running through the SE $\frac{1}{4}$; altitude of bench from 425 to 590 feet above the river; timber is scattering fir and bull pine up to 24 inches diameter and of low value; bench is 50 per cent fruit land; irrigation can possibly be obtained from Hefferly creek; slopes are fair grazing land; in timber berth 434.

SEC. 23, NE. $\frac{1}{4}$; SEC. 24, (WHOLE SEC.); SEC. 25, NW. $\frac{1}{4}$, NE $\frac{1}{4}$, SW. $\frac{1}{4}$, SE. $\frac{1}{4}$; SEC. 26, SE. $\frac{1}{4}$, (FRAC.).—Generally steep slopes with much rock, rising to about 1,800 feet above the river; useless generally for cultivation; timber is generally scrubby fir and bull pine up to 24 inches, with scrub in places, parts of timber have value; all grazing land except narrow strip in west part of SE $\frac{1}{4}$ Sec. 26 and NE $\frac{1}{4}$ Section 23, which is from 30 to 70 feet above the river and has stony loam soil; 50 per cent fruit land and needs irrigation; south half of Sec. 24 in timber berth 434.

SEC. 23, NW. $\frac{1}{4}$ (FRAC. E. OF RIVER); SEC. 26, SW. $\frac{1}{4}$, NE. $\frac{1}{4}$ (FRAC. E. OF RIVER); SEC. 27, SE. $\frac{1}{4}$ (FRAC. E. OF RIVER).—Generally low, even and level bench land from 20 to 70 feet above the North Thompson river; soil, sandy loam, stony in places; bull pine

and fir scattered on higher lands, and thick willow and poplar scrub on lower lands; should be 50 to 75 per cent fruit lands; part likely needs irrigation, might be pumped from the river; in NE. $\frac{1}{4}$ Sec. 26 bench land is narrow and rises into steep slopes of grazing land.

SEC. 27, W. $\frac{1}{2}$, SE. $\frac{1}{4}$ (W. $\frac{1}{2}$); SEC. 34, W. $\frac{1}{2}$ (FRAC.).—Steep slopes with much stone and rock in places; useless for cultivation; altitude rises rapidly; fir and bull pine up to 24 inches in diameter in much small scrubby growth; fair value as timber land, all has low grazing value; SE. $\frac{1}{4}$ of Sec. 34 has small area of sandy loam and stony, gradual slopes of about 30 per cent fruit value; altitude of this is about 125 feet above the river; irrigation is needed.

R. D. McCaw, D.L.S., 1910.—SEC. 28, SE. $\frac{1}{4}$ (FRAC.), W. $\frac{1}{2}$.—Rough steep slopes, useless for cultivation, falling towards Jamieson creek; fair growth of fir and bull pine, usually not over 15 inches diameter in south part, but sometimes to 24 inches diameter to the north, fair value, fair to good grazing. In timber berth 440.

SEC. 28, NE. $\frac{1}{4}$, SEC. 33, E. $\frac{1}{2}$.—Rolling slopes and much workable; parts level; 2,625 feet above sea at southeast corner of northeast $\frac{1}{4}$ of 28, and 3,700 feet at northwest corner of northeast $\frac{1}{4}$ of 33; brown loam 4 inches, with gravelly loam subsoil; of fair farm value with irrigation, which is difficult to get; much good fir and bull pine to 36 inches diameter, some scrub; good grazing; in timber berth 440.

SEC. 29.—Broken by the steep slopes of Jamieson creek, which flows through the east part, and by a small creek tributary coming from the west; 1,795 to 3,230 feet above sea; small area of farm land of poor value in southwest $\frac{1}{4}$, needs irrigation, rest is useless for agricultural purposes; much small growth on slope falling north to the tributary with some fir and bull pine to 36 inches diameter; other slopes are more open, and there is much open bunch grass in northwest $\frac{1}{4}$; fair to good grazing.

SEC. 30.—Generally rough and broken with some rocky slopes and knolls, some steep slopes, 2,405 to 3,720 feet above sea; southeast part has small area of workable slope of poor value, at an altitude of 3,300 feet, would need irrigation, rest is useless for farm land; W. $\frac{1}{2}$ has much small scrub and a good deal of fir to 24 inches of probable value, east $\frac{1}{2}$ has poor timber value there being much scrub growth with fir and bull pine to 15 inches, a few larger; grazing is poor to fair.

SEC. 31.—Rolling slopes, part rocky and steep, rising to the northwest; 3,000 to 3,965 feet above sea; parts are workable but the soil is very poor and no farm value can be given; usually a dense scrub growth of fir, balsam, spruce, jack pine, poplar and willows with a few fir to 20 inches in the west half, and more to 24 inches in the east half, low timber value, much windfall in parts; grazing usually poor.

SEC. 32.—Steep slopes on either side of Jamieson creek, which flows south through the centre; slopes on east side are very rocky, with some scattering fir and bull pine to 24 inches of poor value; on west slope are some scattering fir to 24 inches with much scrub; some open areas of bunch grass occur; grazing is fair to good in the west $\frac{1}{2}$ and of no value in the east $\frac{1}{2}$.

SEC. 33, W. $\frac{1}{2}$.—Rolling, broken slopes of no agricultural value; most of area over 3,500 feet above sea; much good fir and bull pine to 36 inches diameter, some scrub; good grazing; in timber berth 440.

SEC. 34, E. $\frac{1}{2}$.—Steep, broken slopes falling towards the Thompson river; often rocky; fairly well timbered with fir and bull pine, some to 36 inches diameter, scrub in parts; poor to fair grazing.

R. D. McCaw, D.L.S., 1909.—SEC. 36, NE. $\frac{1}{4}$, W. $\frac{1}{2}$ (FRAC.).—Generally broken slopes with a few small benches, altitude 125 to 730 feet above the river; soil is sandy loam, stony in places; fir and bull pine up to 24 inches, much of timber is cut off. balance is probably too thinly scattered for value, all fair grazing; benches should prove of fruit value, possibly 50 per cent, irrigation may be obtained from Jamieson creek.

Tp. 23, R. 17, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

This is a fractional township on the north limit of the railway belt and outside of the lands examined in 1909 contains no agricultural value. Jamieson creek flows south through secs. 16, 9, and 4 between precipitous slopes. The entire area is broken and very rocky, and covered generally with timber growth of some kind.

SECS. 2, 11, 14; SEC. 13, L.S. 12, 13.—Rise steeply from the east with mountainous slopes, covered with fir and bull pine to 24 inches diameter, but usually of poor variety and of doubtful merchantable value, much scrub growth in places; grazing is usually fair.

SEC. 3.—Rolling slopes generally very rocky, and broken in parts; 3,000 to over 3,900 feet above sea; much good fir to 36 inches diameter, scattered through, some brulé, much small poplar and jack pine, some balsam; fair to good grazing.

SEC. 4.—Composed mainly of steep rocky slopes falling towards Jamieson creek, which is in the west part; slopes rise to over 4,000 feet above sea; east $\frac{1}{2}$ has much good fir of lumber value, with a great deal of scrub and jack pine; west $\frac{1}{2}$ has little timber value, the growth being small, scattered, and poor and many open rock slides; grazing is fair in east $\frac{1}{2}$, but of poor value in west $\frac{1}{2}$.

SEC. 5, E. $\frac{1}{2}$.—On steep slopes falling to Jamieson creek towards the east; rocky and stony in parts; no possible farm value; scattered fir to 24 inches of poor value. much scrub growth; fair grazing; windfalls in places.

SEC. 5, W. $\frac{1}{2}$; SEC. 6, E. $\frac{1}{2}$.—Becoming rolling, and rising to over 4,000 feet in altitude; no farm value; dense growth of scrub balsam, jack pine, and fir, with alders and willows, a few large fir in isolated patches; no grazing value.

SEC. 6, W. $\frac{1}{2}$; SEC. 7, W. $\frac{1}{2}$; SEC. 18, W. $\frac{1}{2}$; SEC. 19.—Much over 4,000 feet above sea and thickly timbered with jack pine, spruce, a few fir and poplar to 12 inches diameter, a few larger trees, dense scrub and windfalls in parts; no grazing value.

SEC. 7, E. $\frac{1}{2}$; SEC. 18, E. $\frac{1}{2}$; SEC. 8; SEC. 17.—Rough, rolling, broken area with much rock, rising steeply from Jamieson creek; slopes to over 4,000 feet above sea; no possible farm value; dense growth of small scrub jack pine and balsam, with some poplar and willows, scattering fir to 20 and 24 inches in parts, thick windfalls, not enough timber for merchantable value; no grazing except pine grass on the steep east slope.

SECS. 9, 16.—Steep, rocky slopes rising from Jameson creek on each side, and rising to over 4,000 feet in east $\frac{1}{2}$ of sec. 9; with the exception of the SW. $\frac{1}{4}$ of 9 the entire area is thickly timbered with fir and jack pine on lower slopes, running into jack pine on the higher slopes, much scrub and windfalls in parts; very little grazing value.

SECS 10, 15.—A rough, broken depression running north between rocky ridges and ending to the north in steep, rough slopes; altitude is not much under 3,900 feet above sea and rises to over 4,000 feet at the north; a great deal of rock in parts; thickly timbered, some brulé scrub grown, much small poplar and jack pine, some scattering fir to 24 inches diameter in parts, much windfall; no grazing value.

Tp. 16, R. 18, W. 6th Mer. *A. J. Campbell, D.L.S., 1909.*

SEC. 33, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Slope of mountain rising to west from Moore creek; from 2,150 feet and upwards above South Thompson river; not of agricultural value; fir and some bull pine up to 35 inches, averaging 20 inches, and small fir, jack pine, spruce and poplar, good timber value; some grazing.

SEC. 34, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$; SEC. 35; SEC. 36.—Hilly bench land ranging from 1,725 to 2,400 feet above river; rocky hills; land suitable for cultivation in small areas, not of much value; high rocky hill in east half of sec. 36 and in SW. of sec. 36; a lake of 30 acres, good water in NW. sec. 36, dam at lower end, used for irrigation by Palmer; high rocky hill in south half of section 34; covered with fir on north slopes;

small lake in NE. $\frac{1}{4}$ sec. 34, good water; soil, black loam, stony in places; open country generally, a few fir and clumps of small poplar in places, in sec. 34, some fir up to 20 inches averaging 10 inches, of some timber value; good grazing land.

Tp. 17, R. 18, W. 6th Mer. *A. J. Campbell, D.L.S., 1909.*

SEC. 1.—Rolling bench land from 1,730 to 2,220 feet above river; hilly in south parts; considerable land all over section, suitable for cultivation; would need irrigation, no supply of water; solid rock showing in places; soil, black loam; open, a few clumps of small poplar; 25 per cent farm value; good grazing land.

SEC. 2, NW. $\frac{1}{4}$.—Bench land on gentle slopes rising to west from 2,230 to 2,525 feet above river; considerable part suitable for cultivation, elevation high and no means of irrigation, part to east of possible farm value; soil, sandy clay loam and black loam; open country for most part, a few clumps of poplar, NE. corner with fir to 30 inches, averaging 15 inches, small fir, poplar and brush, of some timber value; good grazing land.

SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Rough hilly bench land from 1,990 to 2,360 feet above river; solid rock outcropping in many places; suitable for cultivation only in small patches, not of much agricultural value; soil, black loam, stony in parts; open, a few clumps small poplar; good grazing land.

SEC. 3.—Rough hilly bench land from 2,180 to 2,575 feet above river, steep slopes on west rising from valley of Moore creek, no agricultural value; solid rock in many places; greater part of section covered with bush; open along east and to southeast, fir up to 30 inches, averaging 20 inches, jack pine to 10 inches, small bushy fir, poplar and brush, of timber value; fair grazing land.

R. D. McCaw, D.L.S., 1910.—The west half of this township is included in the Long Lake forest reserve. The greater part of the east half was examined by D.L.S. Campbell in 1909, under the direction of A. O. Wheeler, D.L.S. The altitude is generally over 4,000 feet throughout. The only area of possible agricultural value is along a creek flowing south through secs. 9 and 4.

SEC. 4, NE. $\frac{1}{4}$; SEC. 9, SE. $\frac{1}{4}$.—Creek runs south through these quarters, with parts of valley workable; altitude 3,200 to almost 4,000 (in NE. $\frac{1}{4}$ of sec. 9); some meadow land; sandy loam, dark in parts; slopes to valley, usually steep and rocky; fir to 24 inches, of lumber value, with jack pine, spruce, scrub and windfall; fair grazing.

SEC. 4, W. $\frac{1}{2}$; SEC. 9, W. $\frac{1}{2}$; NE. $\frac{1}{4}$.—Steep broken rocky slopes rising to the west to much over 4,000 feet, useless for farm land; some fir in parts, with much jackpine, scrub and windfall; grazing of rather poor quality; NE. $\frac{1}{4}$ of sec. 9 has workable slopes in parts, but of extremely doubtful utility.

SECS. 5, 6, 7, 8, 16, 17, 18, 19, 20, 21; 29, S. $\frac{1}{2}$; 30, S. $\frac{1}{2}$.—High, rocky and broken, rising to over 4,500 feet above sea; thick growth of jack pine, mostly small size, very few being over 10 inches diameter, a few fir on some of lower ridges, but too few for value, some spruce in parts, and much scrub mixture and windfall; with the exception of sections 16, 21, north half of 20 and south halves of 29 and 30, the grazing is of little value, windfalls hinder stock from getting through.

SECS. 10, 15, 22; 27, S. $\frac{1}{2}$.—Moore creek flows southerly and crosses west boundary of section 10; valley is rolling; parts hilly, broken, and rocky; altitude of valley is about 3,400 feet to 3,700 feet above sea; slopes to west rise to over 4,000 feet, and to the east to about 3,900 feet; altitude and character of soil makes farm value very doubtful, chief growth is jack pine, with scrub and windfalls, south $\frac{1}{2}$ of sec. 10 has quite a few fir and occasional fir in clumps are found in other parts; pine grass affords grazing.

A. J. Campbell, D.L.S., 1909.—SEC. 11, NE. 1.—Rolling bench land, from 2,275 to 2,440 feet above river; considerable part of quarter suitable for cultivation, particularly

to northwest, of doubtful value on account of altitude; generally open, some poplar and jack pine; good grazing land.

NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Gentle slopes rising to west developing into high, rocky hill on west side, from 2,250 to 2,700 feet above river; a small area along east suitable for cultivation, particularly to SE. part, of doubtful agricultural value; soil, black loam and sandy clay loam; open spaces to east and SE., greater part covered with fir up to 30 inches, averaging 20 inches, jack pine to 10 inches, small fir, poplar and brush, of timber value; fair grazing.

SEC. 12, NE. $\frac{1}{4}$ (W. $\frac{1}{2}$), SE. $\frac{1}{4}$.—Steep rough slopes rising to west from Dropping-water creek, from 1,750 to 2,250 feet above river; rocky on slopes to north; small area of bench land to SW., requires irrigation and no water supply; black loam and sandy loam; fir up to 30 inches on slopes in NE. $\frac{1}{4}$, clumps of small poplar; 15 per cent farm value; good grazing land.

NW. $\frac{1}{4}$.—Rolling bench land, slopes rising to NW., from 2,190 to 2,450 feet above river; solid rock outcropping in places; considerable part of land could be cultivated; of doubtful farm value; high, and no water for irrigation; soil, black loam; open, a few clumps small poplar and a few fir to east; good grazing land.

SW. $\frac{1}{4}$.—Rolling bench land from 2,140 to 2,280 feet above river; solid rock in a few places; greater part suitable for cultivation, of possible farm value, no water for irrigation; soil, black loam; open, a few clumps small poplar; 15 per cent farm value; good grazing land.

SEC. 13, NW. $\frac{1}{4}$ (W. $\frac{1}{2}$), SW. $\frac{1}{4}$.—Steep rough slopes rising to west from Dropping-water creek valley; from 2,140 to 2,510 feet; considerable solid rock showing on slopes; narrow strip bench land along west boundary; of no agricultural value; soil black loam and sandy loam; fir to 30 inches on slopes, averaging 15 inches, small fir, poplar and brush, of timber value; fair grazing land.

SEC. 14, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Rolling bench land from 2,315 to 2,600 feet above river, considerable part could be cultivated, elevation high, of doubtful farm value; soil, black loam and sandy loam; part to east and south open country; to north and west, fir to 20 inches, averaging 12 inches, small bushy fir, poplar, spruce, some jack pine and willow, of timber value; grazing land.

SW. $\frac{1}{4}$, NW. $\frac{1}{4}$.—High rocky hill covers these quarters; steep rough slopes on west; from 2,360 to 2,800 feet above river; no agricultural value; soil, sandy loam; covered with fir to 25 inches, averaging 12 inches, small bushy fir, poplar, spruce, jack pine and willow, of timber value; fair grazing land.

SEC. 23.—Rolling bench land, from 2,340 to 2,630 feet above river, considerable part could be cultivated; broken in places by small gullies, Moore creek through west half, very little water, of doubtful value as farm land; soil, sandy loam; covered with fir to 25 inches, averaging 15 inches, jack pine to 10 inches, small fir, poplar and willow brush, of timber value; fair grazing land.

SEC. 24, SW. $\frac{1}{4}$, (W. $\frac{1}{2}$).—Slope rising to west from Droppingwater creek valley; from 2,100 to 2,365 feet; slopes broken by gullies, no agricultural value; fir up to 30 inches, averaging 15 inches, small bushy fir, some spruce, poplar and brush, of timber value; fair grazing land.

SEC. 25, NE. $\frac{1}{4}$.—Rolling bench land from 2,245 to 2,400 feet above river; Dropping-water creek through middle; partially suitable for cultivation, part to SE. fair farm land, might be irrigated from Droppingwater creek; soil, sandy loam, some stones; open country, bush in NW. part, fir to 30 inches, averaging 10 inches, small bushy fir, jack pine and poplar, also brush, of some timber value; 25 per cent farm value; good grazing land.

NW. $\frac{1}{4}$.—Bench land from 2,275 to 2,550 feet above river; slopes rising to north; summit near centre of north boundary, falling to east and west, greater part could be cultivated, high, of very doubtful farm value, soil, sandy loam, stony in parts; south part open country, fir to north up in 30 inches, averaging 15 inches, small poplar, jack pine, fir and brush; good grazing land.

SEC. 26; SEC. 27; SEC. 34; SEC. 35.—Rough hilly bench land ranging from 2,340 feet to over 3,000 feet above river; slopes rising to west; Secs. 27, 34 and 35 very rough and rocky, Sec. 26 rough and hilly, E. $\frac{1}{2}$ of NE. $\frac{1}{4}$ Sec. 26 disposed of, meadow land, also L.S. 13 of Sec. 34, meadow land, hay, a few acres of meadow and brush land to southwest part of sec. 25; soil, sandy loam, stony in places; covered with jack pine generally from 2 to 10 inches, with fir in places to 30 inches, averaging 10 inches of timber value, also small fir, poplar and brush; some grazing.

R. D. McCaw, D.L.S., 1910.—SEC. 28 (FRAC.).—Made fractional by Ross lake; rolling slopes sometimes steep, 4,250 feet and upward in altitude; much muskeg around north end of lake, with some fair spruce, a ridge of fir to the east in east half, growth mainly jack pine and scrub, with windfalls; poor grazing value.

SEC. 29, N. $\frac{1}{2}$; SEC. 30, N. $\frac{1}{2}$; SEC. 31, (FRAC.); SEC. 32.—Rolling and much over 4,000 feet in altitude; slopes are usually broken, and rise rapidly south of Trout lake, dense growth of jack pine and much scrub and windfall, some willow swamps, and muskegs, some grazing value, but windfalls would greatly hinder the running of stock.

SEC. 33.—Rolling, altitude about 4,200 feet to 4,300 feet above sea; some grass marshes; a settler's road runs into a marsh in northwest quarter, where grass has been cut and stacked; jack pine to 12 inches, with scrub and windfall; fair grazing.

A. J. Campbell, D.L.S., 1909.—SEC. 36, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Bench land from 2,215 to 2,630 feet above river, broken by ravine of Droppingwater creek, steep rough slopes to west of creek; solid rock showing lands to east and south, considerable part suitable for cultivation, not of much value, small area near creek in south part of possible farm value; soil, sandy loam, stony in places; open country; to east of creek in south part, fir to 30 inches averaging 15 inches, some jack pine to 10 inches, poplar, small fir and brush, of timber value; good grazing land.

NW. $\frac{1}{4}$, S.W. $\frac{1}{4}$.—Rough hilly bench land from 2,390 to 2,725 feet above river, rocky in NW. $\frac{1}{4}$, no agricultural value; covered with fir to 30 inches, averaging 15 inches, small fir, poplar and brush, of timber value; some grazing.

Tp. 18, R. 18, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

The west half of the township is included in the Long Lake forest reserve. A road from Kamloops to Trout lake runs through this part. There are a number of settlers in the east part, holding lands ranging in altitude from about 3,200 feet to 3,900 feet above sea. In some instances the altitude is higher. The lands taken up usually have open areas or grass marshes, and above 3,500 feet very little has been done with cultivation. A homesteader on section 27 at an altitude of between 3,600 to 3,700 feet had a crop of oats which he did not expect to mature. This information was gathered on the last day of August. All that part within the forest reserve is timbered except a small area of open land in W. $\frac{1}{2}$ of sec. 33 and NE. $\frac{1}{4}$ of sec. 28, and the lands undisposed of in the east half are timbered with small exception.

SEC. 1, S. $\frac{1}{2}$, NW. $\frac{1}{4}$.—Gently rolling, parts broken, 3,810 to 4,000 feet above sea; sandy loam with dark loam to 6 inches depth in parts; some hay meadow in NW. $\frac{1}{4}$; much willow, poplar, and jack pine with a great deal of fir to 36 inches and larger, of value, windfalls, good land but of very doubtful utility owing to altitude; grazing fair.

SEC. 2, S. $\frac{1}{2}$; NE. $\frac{1}{4}$.—Rolling slopes, parts rough with rock outcrops; 3,950 to 4,160 feet above sea level; generally a few inches of black loam with sandy loam sub-soil, stony; poplar, willows, jack pine, and some spruce, usually scrubby, some fir to 36 inches. An Italian squatter is located on the NE. $\frac{1}{4}$ beside a hay meadow, altitude of meadow is 3,995 feet; very doubtful if any crop but hay will grow successfully; fair pine grass grazing.

SEC. 3, SE. $\frac{1}{4}$.—Usually rough and stony and of no agricultural value, 4,060 to 4,290 feet above sea; good grass marsh around a small lake in west part; thick jack pine to 10 inches, poplar, willows and a few fir; fair grazing.

SEC. 3, N. $\frac{1}{2}$, SW. $\frac{1}{4}$; 10, 11, 14, 15.—Rising to the west to over 4,500 feet; surface is rolling and sometimes abruptly broken; some sloughs and muskegs; dense growth of jack pine from scrub to 15 inches diameter with some fir in parts, windfalls common, scrub in parts, some spruce in muskegs, fir of probable value and having diameter of 24 inches, sometimes larger, in sec. 3 NW. $\frac{1}{4}$, sec. 10 SE. $\frac{1}{4}$, sec. 11 S. $\frac{1}{2}$ and NW. $\frac{1}{4}$, sec. 14 N. $\frac{1}{2}$ and SE. $\frac{1}{4}$; poor to fair grazing.

SECS. 4, 5, 6, 7, 8, 9, 16, 17, 18.—High, rough, rolling and hilly with quite a few rocky outcrops, 4,200 to over 4,700 feet in altitude; a height of land runs through secs. 6, 8, and 16 draining water both east and west; NW. $\frac{1}{4}$ of sec. 7 is made fractional by a part of Beaver lake; NE. $\frac{1}{4}$ of sec. 7 and SE. $\frac{1}{4}$ of 18 are made fractional by a large lake surrounded by hills; other small sloughs and marshes exist; all thickly timbered with jack pine from scrub size to 15 inches diameter with some poplar and willow scrub, much windfall, some of ridges have fir in large clumps, along road in sec. 18 fir has value; the following areas have lumber value, the fir reaching 24 inches diameter and occasionally 36 and 48 inches, SE. $\frac{1}{4}$ of sec. 6, SW. $\frac{1}{4}$ of 5, and sec. 18; in other parts fir is found occasionally but is of doubtful value; pine grass grows throughout.

SEC. 12, W. $\frac{1}{2}$.—Gentle slopes to west; 3,790 to over 4,000 feet above sea, sandy loam with some black soil; heavily timbered with much jack pine to 10 inches, some poplar and willows and a fair amount of fir to 30 inches, and often larger, timber has value; grazing is fair; altitude makes the land of questionable value agriculturally.

SEC. 13, W. $\frac{1}{2}$, NE. $\frac{1}{4}$.—Rather rough and hilly but much rolling, workable slope; parts steep and rocky, 3,800 to over 4,000 feet in altitude; sandy loam soil of rather poor quality; thickly timbered with jack pine to 14 inches, poplar and willow scrub, a few spruce, fir quite frequent to 24 inches diameter, likely lumber value; fair grazing; value agriculturally is questionable.

SEC. 19; SEC. 20, W. $\frac{1}{2}$.—Generally rough and hilly, with rocky ridges rising to the west, 4,000 to about 4,400 feet above sea; thick timber growth consisting mainly of small jack pine and poplar and willow scrub, good fir on the tops of some hills and along the road, likely value for lumber; some marshes along road in east $\frac{1}{2}$ of sec. 20; poor to fair grazing.

SEC. 20, E. $\frac{1}{2}$; SEC. 21.—Very rough and broken, with steep slopes; rocky outcrops; altitude 3,900 to 4,575 feet above sea; dense scrub with windfalls, some scattering fir, entire area has evidence of old brûlé, some bare knolls; scant grazing.

SEC. 22; SEC. 23, SW. $\frac{1}{4}$.—High, rising often in steep precipitous rocky slopes; from 3,900 to 4,600 feet above sea; dense growth of jack pine usually scrubby, with much scrub growth of spruce, poplar, willows, and alder, some scattering fir of small dimension in N. $\frac{1}{2}$ of sec. 22; grazing is poor to fair.

SEC. 23, N. $\frac{1}{2}$.—Usually rough slopes and unfit for cultivation; altitude from 3,740 to over 4,000 feet above sea; thick growth of small spruce, fir, jack pine, willows, and poplar with windfalls in places, scattering fir to 36 inches, of probable value, grazing is poor to fair.

SEC. 23, SE. $\frac{1}{4}$; SEC. 24, W. $\frac{1}{2}$.—Generally rolling or gradual slopes rising to SW.; a few inches of dark loam in parts with grey or brownish loam subsoil, parts stony; 3,715 to over 4,000 feet (in SE. $\frac{1}{4}$ of 23), altitude makes agricultural value questionable; dense growth of timber, scattering fir to 36 inches with small fir, willows, poplar, and jack pine, a few spruce and jack pine to 15 inches, timber has value, windfalls; fair pine grass grazing.

SEC. 25, SW. $\frac{1}{4}$ (FRAC.); SEC. 26, S. $\frac{1}{2}$, NE. $\frac{1}{4}$.—Generally rolling slopes rising to SW. and usually workable; parts rocky and broken; 3,500 to 3,900 feet in altitude; greyish or brownish loam, often gravelly and stony, a few inches of surface soil in

places; small fir, poplar, willows, and spruce with scattering fir to 36 inches and some jack pine, fir is of lumber value; fair grazing.

SEC. 27, S. $\frac{1}{2}$, NE. $\frac{1}{4}$ (S. $\frac{1}{2}$).—Composed of rough, steep slopes to the south, often rocky, becoming rolling in NE. $\frac{1}{4}$; 3,600 to over 4,000 feet in altitude; no agricultural value; dense growth of scrub jack pine, poplar, spruce, and fir, some fir to 36 inches of likely value, windfalls; rather poor grazing.

SECS. 28, 29.—Generally rough and rolling, with parts broken, steep, and rocky; poor soil; parts could be worked but agricultural value is questionable; 3,600 and upwards in altitude; west part of sec. 29 and SE. part of 28 rises to over 4,000 feet; much scrub with some old brulé in east part of 28, jack pine to 12 inches with some poplar of same size in parts, fir scattering and of possible value, diameter reaches 48 inches in some instances, windfalls in parts.

SEC. 30; SEC. 31. SW. $\frac{1}{4}$.—Rough, rolling land, parts hilly and rocky, 4,000 to 4,370 feet above sea; frequent fir to 24 inches, some larger, lumber value, jack pine to 12 inches, some spruce and much scrub growth; grazing is usually poor.

SEC. 31, NW. $\frac{1}{4}$.—Largely workable slopes, parts stony and rocky, sandy loam; 3,750 to over 4000 feet in altitude; much scrub with jack pine to 10 inches and scattering fir to 28 inches, of likely value; grazing rather poor; unlikely farm value owing to altitude.

SE. $\frac{1}{4}$.—Broken and rough with a few rocky outcrops; some parts workable but useless owing to altitude which is 3,900 feet and upwards; fir to 24 inches, jack pine, scrub and windfalls; rather poor grazing.

NE. $\frac{1}{4}$.—Much workable slope with parts having black loam soil; some willow flats; 3,700 to 3,900 feet above sea; very doubtful value for farm land owing to altitude; fir to 24 inches, jack pine scrub and windfalls; fair grazing.

SEC. 32, NW. $\frac{1}{4}$.—Easy slopes; dark sandy loam, stony in parts; 3,550 to 3,800 feet above sea; frequent fir to 24 inches, some jack pine and scrub; fair grazing; doubtful farm value, northeast part has possible value.

SW. $\frac{1}{4}$.—Easy slopes and flats, parts broken, altitude runs up to 4,000 feet; unlikely farm value; fir to 20 inches and jack pine to 8 inches, with much small scrub and windfall; poor grazing.

SE. $\frac{1}{4}$.—Usually badly broken, north part has some land of possible farm value; sand loam soil; some rock outcrops; fir to 30 inches of good value, jack pine to 12 inches, scrub and a few spruce, some poplar; poor grazing.

NE. $\frac{1}{4}$.—Easy workable slopes; sandy loam with parts having black loam soil; 3,450 to 3,600 feet above sea; probable agricultural value; thickly timbered with fir to 24 inches, scrub and some windfall, timber value; fair grazing.

SEC. 33, NW. $\frac{1}{4}$.—Some workable land at an altitude of 3,500 feet of possible value; sandy loam; rest is broken, rocky, and hilly rising to over 3,600 feet; much fir to 24 inches, scrub and windfall, fair grazing.

SW. $\frac{1}{4}$.—Much workable land in flats and slopes; parts broken; some dark sandy loam; 3,500 to over 3,600 feet above sea; very doubtful farm value; fir to 30 inches, much scrub and windfall, some jack pine and spruce; fair grazing.

E. $\frac{1}{2}$.—Parts rough, broken and rocky; parts gently rolling; 3,430 to over 3,800 feet above sea; some open areas, no farm value; some good fir with much scrub; poor grazing.

J. E. Ross, D.L.S., 1909.—The land surveyed in this township consists of dry rolling hills, open in places and wooded with fir and jack pine. Three settlers have located in secs. 34 and 27, and have done some improvements. There are some small ponds, in which the water is slightly alkaline, and also a small creek in sec. 27. In secs. 13 and 24 there is a pond of ten acres and in its vicinity are several small wild hay meadows. The elevation of this land is about three thousand three hundred feet above sea-level. Good roads, though necessarily hilly, connect with Kamloops, twelve miles to the northwest. Fruit will not grow at this altitude, but crops do very well some

seasons. The soil is a light sandy loam. The winter climate is rather severe, the land being subject to low temperature and penetrating winds. In summer the days are hot but the nights cool. Irrigation is not necessary. The timber is of no particular commercial value but will provide a good fuel supply for many years. While the surrounding hills are fairly rich in copper ore, similar to that mined on the Iron Mask and other claims, none was seen in the sections surveyed.

Tp. 19, R. 18, W. 6th Mer. *A. V. Chase, D.L.S., 1910.*

Very little land of any value for agricultural purpose is undisposed of herein. Considerable land is found which in itself is workable soil but its position and dryness make its agricultural value very small. The township is rolling in general, with two summits Coal hill and Sugar Loaf hill. Considerable open, rolling and sparsely timbered grazing land is found in the centre and north part, while the country is timbered in the west and southwest parts.

SEC. 1, SW. $\frac{1}{4}$; SEC. 2, N. $\frac{1}{2}$; SEC. 11, S. $\frac{1}{2}$; SEC. 10, SE. $\frac{1}{4}$; S. $\frac{1}{2}$ of N. $\frac{1}{2}$.—From 3,000 to 3,500 feet above sea; high, rolling country, very rocky in places and unfit for agriculture of any kind; essentially grazing land, but covered more or less with stretches of bull pine and fir to 24 inches diameter; grazing fair.

SEC. 3, SW. $\frac{1}{4}$.—About 3,500 feet above sea; no agricultural value; high, rocky; scattered bull pine and fir; fair grazing.

SEC. 5; SEC. 8, SW. $\frac{1}{4}$.—From 2,980 to 3,500 feet above sea; rolling, stony land, no agricultural value; possible lumber value in fir to 24 inches diameter, some poplar and small jack pine; fair grazing.

SECS. 6, 7.—From 2,910 to 3,700 feet above sea; rolling, stony land becoming very rocky to south; no agricultural land; only value is in timber and grazing; fir to 24 inches diameter, scattered bull pine to 24 inches, and poplar with much small fir; fair grazing.

SEC. 11, L.S. 16; SEC. 14, PART OF S. $\frac{1}{2}$; SEC. 13, L.S. 5, 6.—From 2,900 to 3,200 feet above sea; broken and steep, no agricultural value, grazing land only; scrub growth.

SEC. 15, N. $\frac{1}{2}$.—About 3,000 feet above sea; quite rolling and stony, no agricultural value, mostly open; grazing land.

SEC. 16, PART OF E. $\frac{1}{2}$.—About 3,000 above sea; very rolling and stony; few small workable patches needing water; mostly open in north part, some scattered fir and bull pine in south to 20 inches diameter, of doubtful value.

SEC. 17.—From 2,645 to 2,940 feet above sea; gently rolling land, nearly all workable; soil, sandy in some places, running to alkali, all needing water, very dry; covered more or less with bull pine to 24 inches diameter, and fir to 20 inches, with poplar, no lumber value; fair grazing.

SEC. 18.—From 2,645 to 2,910 feet above sea; rolling land, becoming stony to south; mostly workable in north part, but soil is exceedingly dry and useless without water; fir and bull pine to 24 inches diameter, with fir in greatest quantity to south; poor grazing.

SEC. 19, PART OF E. $\frac{1}{2}$.—From 2,645 to 2,790 feet above sea; rolling land of doubtful farm value; probable lumber value in fir and bull pine to 20 inches diameter; poor grazing.

SEC. 20.—From 2,645 to 2,930 feet above sea; rolling land, stony in places; sandy loam soil; but nearly all workable land, needing water, farm value doubtful; covered with small bull pine and fir, large timber has been cut; poor grazing.

SEC. 21.—Altitude is 2,700 to 3,000 feet above sea; rolling land; considerable alkali; broken and stony to NE.; possibly 30 per cent of the area of section is workable in scattered patches, no farm value without water; scattered clumps of timber, no lumber value; fair grazing.

SEC. 22.—From 2,880 to 3,200 feet above sea; in general, rolling stony land with steep slopes; probably one-third of the whole area is workable soil, of no agricultural value without water; scattered fir and bull pine to 20 inches diameter, of no commercial value; rather fair grazing.

SEC. 23, SW. $\frac{1}{4}$.—3,000 to 3,470 feet above sea, very steep open side hill, grazing value only.

SEC. 26, W. $\frac{1}{2}$.—2,720 to 3,000 feet above sea; high and steep, not workable; scattered timber only, fir and bull pine to 30 inches diameter; fair grazing.

SEC. 27 (FRAC.)—From 2,720 to 3,000 feet above sea; undisposed of part is gently rolling, stony land with some small workable patches of no value without water; rather open in places, some scattered bull pine and fir to 18 inches diameter, best has been cut over; fair grazing.

SEC. 28.—From 2,880 to 3,000 feet above sea; rolling, mostly open country; very few patches of workable land; dry, shallow, sandy soil, all needing water; scattered clumps of bull pine and fir of no commercial value; essentially a grazing section.

SEC. 29.—High to Sugar Loaf hill; not workable; very little timber; fair grazing.

SEC. 30, W. $\frac{1}{2}$, SE. $\frac{1}{4}$.—From 2,460 to 3,000 feet above sea; high land with steep slopes, fit for grazing only; some fir and bull pine to 24 inches diameter, of doubtful commercial value.

SEC. 31, 32, NW. $\frac{1}{4}$.—2,220 to 2,850 feet above sea; gently rolling land, some workable portions of sandy loam and alkaline soil in patches, very dry and needing water; essentially grazing land; no timber value.

SEC 32, SE. $\frac{1}{4}$; 33 (FRAC.).—(Undisposed of part) from 2,400 to 3,000 feet above sea; mostly open rolling land; some patches of small fir; grazing value only.

SEC. 34, W. $\frac{1}{2}$, SE. $\frac{1}{4}$.—About 3,000 feet above sea; high, rocky, and of no farm value; small patches of fir and bull pine of no commercial value; fair grazing.

SEC. 35 (FRAC.); 36 NW. $\frac{1}{4}$.—Mostly rolling slopes of no agricultural value, covered more or less with bull pine and fir to 20 inches diameter, of doubtful lumber value; fair grazing.

Tp. 20, R. 18, W. 6th Mer. *R. D. McCaw, D.L.S., 1909.*

SEC. 20, N. $\frac{1}{2}$ (FRAC.); SEC. 19, NE. $\frac{1}{4}$; SEC. 29, SW. $\frac{1}{4}$; SEC. 30, SE. $\frac{1}{4}$.—Steep, open, rocky, broken slopes, gravelly in places; worthless.

SEC. 21, NE. $\frac{1}{4}$ (FRAC.).—Open, rough and broken, 800 to 1,200 feet above the South Thompson river, gravelly; soil, fine silt; fair grazing.

NW. $\frac{1}{4}$ (FRAC.).—West part broken by deep coulees and worthless; east part rough with scant grazing; 800 to 1,200 feet above the South Thompson river.

SEC. 22, NW. $\frac{1}{4}$.—Rough, broken, open land 900 to 1,200 feet above the South Thompson river; soil, fine silt, much gravel; fair grazing.

NE. $\frac{1}{4}$.—Rough, broken, open land with small area in NE. corner of workable slopes; 1,000 to 1,200 feet above the South Thompson river; soil, fine silt; fair grazing land; NE. corner about 25 per cent farm land, needing irrigation, which is impossible to obtain conveniently.

SEC. 23, S. $\frac{1}{2}$ (FRAC.).—Broken side hill, rough and stony, 1,000 feet above the South Thompson river; scant grazing.

NE. $\frac{1}{4}$ (W. $\frac{1}{2}$), NW. $\frac{1}{4}$.—Open, rolling land broken in SE. part; 1,000 to 1,200 feet above the South Thompson river; soil, fine silt gravelly in places; very stony except the NW. part of NE. $\frac{1}{4}$, which has 25 per cent value as farm land, irrigation needed and impossible to obtain conveniently; all fair grazing.

SEC. 24, N. $\frac{1}{2}$ (FRAC. UNDISPOSED OF).—Rough and broken, open, 1,200 to 1,750 feet above the South Thompson river; often stony; scant grazing.

SEC. 25, W. $\frac{1}{2}$.—Broken by steep hills and bluffs; 1,200 to 1,750 feet above the South Thompson river; soil, very stony; fair grazing land.

SEC. 26, N.W. $\frac{1}{4}$.—Open, rolling prairie land; 1,350 to 1,600 feet above the South Thompson river; soil, fine loamy silt, very stony on the slopes; SE. part 40 per cent farm land, irrigation needed for successful growth, but difficult to obtain; fair grazing.

NE. $\frac{1}{4}$.—Broken land, open, 1,200 to 1,300 feet above the South Thompson river; good grazing land.

SW. $\frac{1}{4}$.—Gradual slopes, open, 1,200 feet to 1,350 feet above the South Thompson river; soil, stony silt; about 35 per cent farming value; irrigation needed, but difficult to obtain.

SEC. 27 (WHOLE SEC.).—Rolling prairie land with many knolls and hills; 1,200 to 1,600 feet above the South Thompson river; soil, stony silt; land is useless for agriculture except small area in SE. corner of NE. $\frac{1}{4}$ which has low farming value; all fair grazing.

SEC. 28, E. $\frac{1}{2}$, NW. $\frac{1}{4}$.—Rolling prairie land, steep slopes in places and sometimes broken; 1,200 to 1,600 feet above the South Thompson river; very stony loam and silt; fair grazing land.

SW. $\frac{1}{4}$.—West half badly broken by coulees, steep and rough, devoid of vegetation, worthless land; east half steep stone side hill with fair grazing value; 800 to 1,300 feet above the South Thompson river.

SEC. 29, NW. $\frac{1}{4}$; SEC. 30, NE. $\frac{1}{4}$.—Steep slopes of Mara hill; some scattering bull pine and fir up to 18 inches diameter; of possible timber value.

SEC. 29, NE. $\frac{1}{4}$.—West half, steep rocky slopes, worthless; east half, steep slopes 1,250 to 1,700 feet above the South Thompson river; scant grazing.

SE. $\frac{1}{4}$.—West half, steep slopes of Mara hill, worthless; east half, steep, broken slopes 800 to 1,200 feet above the South Thompson river; scant grazing.

SEC. 30, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$ (FRAC.).—Open, broken slopes, very steep, rising from the south; altitude rises to about 1,200 feet above Kamloops lake; useless for agriculture.

SEC. 31, SW. $\frac{1}{4}$.—Open rolling slope generally, 800 to 1,500 feet above Kamloops lake; soil, light sandy loam, very rocky and stony in west parts; a very few scattering bull pine up to 24 inches diameter; W. $\frac{1}{2}$ 25 per cent fruit land, needing irrigation, which might be obtained from Tranquille river; E. $\frac{1}{2}$ worthless.

NW. $\frac{1}{4}$.—Open rolling land broken in places, 1,020 to 1,430 feet above Kamloops lake; soil, sandy loam, stony; very stony and rocky in east side; some scattering bull pine and fir of poor value, generally scrubby trees; parts workable 25 per cent farm value, needs irrigation, part might be irrigated from Tranquille river.

NE. $\frac{1}{4}$.—Rolling slopes broken in places and rising to Mara hill in south; 1,320 to 1,800 feet above Kamloops lake; clay and sandy loam with stone; scattering fir and bull pine up to 24 inches, of possible value in S. $\frac{1}{2}$; N. $\frac{1}{2}$ 30 per cent farm land, not likely needing irrigation.

SE. $\frac{1}{4}$.—Steep and broken slopes of Mara hill; fir and bull pine to 24 inches of possible value.

SEC. 32 (WHOLE SEC.).—Steep, rough broken slopes rising to summit of Mara hill; altitude over 1,475 feet above Kamloops lake; very stony and rocky; scattering fir and bull pine scrub, with a few large trees in west part; fair grazing value.

SEC. 33 (WHOLE SEC.).—Generally rough and broken land; 1,590 to 2,000 feet above Kamloops lake; loamy silt, very stony; open, scant grazing; small area in SE. corner of SE. $\frac{1}{4}$, 25 per cent farm land needing irrigation, no convenient source known.

SEC. 34, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Slightly rolling open slopes 1,600 to 1,850 feet above South Thompson river; soil stony loam; W. $\frac{1}{2}$ 20 per cent farm land, needs irrigation but there is no convenient source; E. $\frac{1}{2}$ grazing land.

NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Open rolling slopes 1,550 to 1,760 feet above the South Thompson river; stony loam; E. $\frac{1}{2}$ about 20 per cent farm land, needs irrigation, but there is no convenient source; E. $\frac{1}{2}$ good grazing land.

SEC. 35, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Open rolling slopes 1,560 to 1,860 feet above the South

Thompson river; stony loam soil on slopes, not so much stone in depressions; W. $\frac{1}{2}$ about 35 per cent farm land, irrigation needed for successful growth but there is no convenient source; E. $\frac{1}{2}$ grazing land.

NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Very rough rolling slopes, open; 1,400 to 1,900 feet above the South Thompson river; good grazing land.

SEC. 36, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$, NE. $\frac{1}{4}$ (W. PART), SE. $\frac{1}{4}$ (W. PART).—Rough, rolling, open slopes falling towards the South Thompson river, with high rocky ridges; no land of agricultural value; good grazing land.

A. V. Chase, D.L.S., 1910.—(PART SOUTH OF KAMLOOPS LAKE.)—The only part undisposed of in this fraction is taken up by Dufferin hill and adjacent steep slopes. On the north part there is a slope of 1,700 feet in a little over a mile. No agricultural value is found, the country being very steep, and precipitous in places. Considerable fir to 18 and 20 inches diameter is found, but lumber value is doubtful. Fair grazing is found in places but rather poor as a whole.

Tp. 21, R. 18, W. 6th Mer. R. D. McCaw, D.L.S., 1909.

SEC. 1, NE. $\frac{1}{4}$, SW. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Steep, broken slopes 100 to 1,385 feet above the North Thompson river, very rocky and stony; a few scattering bull pine; generally open; scant grazing value.

NW. $\frac{1}{4}$.—Small area of bench land in NW. part with steep slopes falling to the North Thompson river on east side, altitude of bench land about 1,300 feet above the river; soil, black loam in places and grey sandy loam usually stony; some scattering bull pine and fir but generally open; 25 per cent farm land in NW. corner, needing irrigation which is difficult to obtain; all fair grazing land.

SEC. 2 (WHOLE SEC.).—Rolling land with some high rocky knolls from 1,225 to 1,900 feet above the North Thompson river; soil very stony, sandy loam; all open land, parts of 25 per cent farm value, many slopes are workable but all need irrigation which is difficult, if possible to obtain; all fair grazing; a number of small alkaline ponds exist throughout.

SEC. 3 (WHOLE SEC.).—Rough, rolling, open land with rocky knolls 1,100 to 1,500 feet above the South Thompson river; soil in depressions, black loam; on slopes grey loam, all very stony, subsoil very stony and gravelly, parts of about 25 per cent farming value, but not more than 30 acres in each quarter; all scant grazing; depressions do not likely need irrigation, but slopes require it.

SEC. 4, SE. $\frac{1}{4}$.—Open, rolling land with parts rough, 1,100 to 1,285 feet above the South Thompson river; soil black loam in depressions and stony grey loam on slopes, subsoil usually stony and gravelly; depressions are all workable and grass has much better growth than on slopes; evidence of moisture; 50 per cent farm land, possible not needing irrigation.

NE. $\frac{1}{4}$.—Rough, rolling open land 1,160 to 1,525 feet above the South Thompson river; soil stony loam, gravelly; very small area of value as agricultural land; fair grazing.

SEC. 5, NE. $\frac{1}{4}$.—Generally broken and hilly and of very little agricultural value, 1,455 to 2,000 feet above the South Thompson river; stony loam, gravelly in most places; scattering bull pine in NW. part; scant grazing.

NW. $\frac{1}{4}$.—Rolling slopes rising from 1,550 to over 2,000 feet above the South Thompson river; stony loam; dry workable slopes, with bull pine and fir, scattering, of very small agricultural value; fair grazing.

SW. $\frac{1}{4}$.—Steep slopes falling from north and south towards centre of quarter, 1,400 to 2,000 feet above the South Thompson; soil in valley dark sandy loam; scrubby bull pine and fir on slopes; slopes have fair grazing, and valley 30 per cent farm land; irrigation may not be needed, and would be difficult to obtain.

SEC. 6, SE. $\frac{1}{4}$.—Steep, rocky slopes fall from the north to pond in south part of quarter, 1,300 to 2,000 feet above the South Thompson river; soil in bottom black

loam, and rather stony with clay loam subsoil; bull pine and fir scattering throughout, rather poor quality; part 50 per cent farm land; slopes have some grazing land.

SW. $\frac{1}{4}$.—Rough, broken, rocky slopes, parts have fair grazing; timber is bull pine and fir up to 24 inches, of possible value.

SEC. 8, SE. $\frac{1}{4}$.—Slope rising from 1,800 to over 2,000 feet above the South Thompson river; fir and bull pine to 24 inches of fair quality; grazing throughout.

SEC. 9, SW. $\frac{1}{4}$.—Slopes from 1,525 to 2,000 feet above the South Thompson river; brownish grey loam, generally stony and gravelly; east part is open, in west part scattering fir and bull pine; seems very 'dry, but if irrigation could be obtained would be a good farming quarter; fair grazing land.

NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Rough, broken land with many knolls, often rocky, 1,400 to 1,800 feet above the South Thompson river; stony loam soil; open land; fair grazing.

SEC. 10 (WHOLE SEC.).—Rather rough, rolling open land with rocky knolls, 1,400 to 1,600 feet above the South Thompson river; sandy loam with black loam in depressions, all very stony and gravelly; small areas in all quarters of about 25 per cent farm land, possibly not needing irrigation, grazing throughout.

SEC. 11, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Rolling land with many knolls, 1,400 to 2,000 feet above the North Thompson river; soil, sandy loam, very stony and in places rock outcrops appear; all open except east part of NE. $\frac{1}{4}$, where is found some bull pine and fir; parts are workable but area is small and land is of rather doubtful farming value; irrigation would be needed and is impossible to obtain; all fair grazing land.

SEC. 12, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Steep, broken slopes with many outcrops of rocks; 385 to 2,000 feet above the North Thompson river; a few fir and bull pine scattered but of no value; all scant grazing land.

SW. $\frac{1}{4}$.—Small area of bench land in SW. corner, about 1,300 feet above the North Thompson river; soil, stony loam; 25 per cent farm land needing irrigation; balance of quarter section has steep slopes; some fir and bull pine; all fair grazing land.

SEC. 13 (WHOLE SEC.); SEC. 14, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Rough broken slopes from 770 to 2,020 feet above the North Thompson river; very rocky and stony, of no farming value; some scattering fir and bull pine, but nearly all open land; scant grazing usually with a few areas of good grazing land.

SEC. 15, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$; SEC. 16, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Rough, broken, rolling, open land with rocky knolls, 1,500 to 2,000 feet above the South Thompson river; very stony and gravelly loam; rather scant grazing land.

SEC. 15, SE. $\frac{1}{4}$.—Rolling, open slopes from east and west to long slough in centre of quarter; 1,500 to 1,625 feet above the South Thompson river; generally sandy loam and very stony; some black loam slopes around the slough, 25 per cent farm value, possibly not needing irrigation; fair grazing land.

SEC. 16, NW. $\frac{1}{4}$.—Slopes, rough and steep in places, 1,850 to 2,050 feet above the South Thompson river; soil usually stony loam with black loam around slough in SE. part; parts 25 per cent farm land, possibly not needing irrigation; all scant grazing, scattering poplar scrub in places.

SEC. 17, SE. $\frac{1}{4}$.—Small area of gentle slope in NE. corner, 1,900 feet above the South Thompson river; black loam and stony grey loam subsoil; some scattering poplar and willow brush, on slopes rising to the west is growth of bull pine and fir up to 24 inches; fair grazing; NE. part 50 per cent farm land, not likely needing irrigation.

SEC. 17, NW. $\frac{1}{4}$; SEC. 18, SE. $\frac{1}{4}$; SEC. 7, NW. $\frac{1}{4}$.—High slopes rising to over 2,000 feet above the South Thompson river; fir and bull pine up to 24 inches, of possible value for lumber; fair grazing throughout.

SEC. 18, NE. $\frac{1}{4}$.—Steep slopes falling from east side; small flat along Du Bois creek on west side; 1,530 to 2,000 feet above the South Thompson river; black loam

in low land with clay and stone on slopes; fir and bull pine to 36 inches, of good value, some poplar and willow scrub on low land, low land has 75 per cent farm value, irrigation if necessary may be obtained from Lac Du Bois; all fair grazing.

NW. $\frac{1}{4}$.—Steep broken slopes from west side with gentle slopes close to Du Bois creek; 1,530 to over 2,000 feet above the South Thompson river; light clay and stone, rocky on hillside in places; fir and bull pine to 36 inches diameter, of good value; gentle slopes have 60 per cent farm land value, irrigation can be obtained from Lac Du Bois; all fair grazing.

SEC. 19, SW. $\frac{1}{4}$.—Steep slopes rising to west and becoming very rocky, small area of gentle slope in SE. corner; 1,670 feet and upwards above the South Thompson river; soil in SE. corner light clay, stony; 60 per cent farm land; irrigation can be obtained from Lac Du Bois; fir and bull pine to 36 inches, of good value; good grazing.

SEC. 20, SW. $\frac{1}{4}$ (S. $\frac{1}{2}$), SE. $\frac{1}{4}$ (FRAC. S. $\frac{1}{2}$), NW. $\frac{1}{4}$ (N. $\frac{1}{2}$).—Rather rough, broken land with steep slopes in places, altitude from 1,800 to 2,000 feet above the South Thompson river; stony loam with outcrops of rock appearing often; fir and bull pine scattering and having timber value on S. $\frac{1}{2}$ of SW. $\frac{1}{4}$, some open land around Lac Du Bois, with scattering poplar and willow scrub.

SEC. 21 (WHOLE SEC.).—Rough, rolling slopes rising to the north, 1,675 to 2,425 feet above the South Thompson river; soil, stony loam; some scattering fir and bull pine, also clumps of poplar; scant grazing in south part, with better grazing in north part.

SEC. 22, (WHOLE SEC.).—Open rolling slopes 1,600 to 2,375 feet above the South Thompson river, parts much broken; soil, sandy loam, generally very stony and containing much gravel; rock outcrops appear in places; some parts are workable but very dry and would need irrigation which is difficult if possible to obtain; all fair grazing.

SEC. 23, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Rolling land, open, 1,555 to 1,900 feet above the North Thompson river; soil, sandy loam, black loam in places, all rather stony; nearly all of land is workable but very dry, 25 per cent farm land, requires irrigation which cannot be obtained; all good grazing.

NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Rolling slopes, 1,555 to 2,465 feet above the North Thompson river; stony loam; open land with some bull pine and fir trees in east part; all rather poor grazing land; NW. part of NE. $\frac{1}{4}$ has some fair workable slopes, 25 per cent farm land, needs irrigation which cannot be obtained.

SEC. 24, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Steep broken slopes, 1,225 to 2,465 feet above the North Thompson river; soil, stony clay and sandy loam, many outcrops of rock; some scattering bull pine and fir, generally open land; scant grazing.

NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Open rolling land, 895 to 1,225 feet above the North Thompson river; soil stony loam; open land, some rock outcrops; a large area workable and depressions not likely need irrigation, slopes are very dry and need water, 25 per cent farm land; all rather scant grazing.

SEC. 25, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$; SEC. 26, SE. $\frac{1}{4}$.—Rather broken open rolling slopes, 1,240 to 1,500 feet above the North Thompson river; very stony loam; much workable land but too stony for use; scant grazing land.

SEC. 26, SW. $\frac{1}{4}$.—Open rolling stony slopes, 1,435 to 1,900 feet above the North Thompson river; soil, loam; in depressions through centre of quarter some 25 per cent farm land exists, needs irrigation for success, difficult to obtain it; scant grazing.

NW. $\frac{1}{4}$.—Open rolling slopes broken in most places, 1,435 to 2,045 feet above the North Thompson river; soil very stony, sandy and clay loam; some scattering bull pine and fir, also poplar clumps; fair grazing land.

SEC. 27 (WHOLE SEC.).—Rather rough rolling slopes, broken in many places 1,675 to 2,400 feet above the South Thompson river; soil stony loam; no agricultural value; fair grazing; much open land towards SE. with scattering fir, bull pine and scrub in NE. part, NW. $\frac{1}{4}$ probable lumber value.

SEC. 28, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Rolling and broken land 2,080 to 2,500 feet above the South Thompson river; sandy stony loam; scattering fir, bull pine and poplar scrub, NE. $\frac{1}{4}$ has timber to 30 inches diameter and is of probable lumber value, all three quarters have much open land; fair grazing.

SEC. 29, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$, SE. $\frac{1}{4}$ (E. $\frac{1}{2}$), SW. $\frac{1}{4}$ (W. $\frac{1}{2}$); SEC. 30, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$; SEC. 31, SE. $\frac{1}{4}$.—Rolling broken slopes in east part sec. 29, rising in steep slopes in west part of sec. 29, and attaining an altitude of over 3,000 feet above the South Thompson river in east part of sec. 30; sandy loam, stony and rocky; scrubby fir and bull pine of little value, and much scrub; good grazing land.

SEC. 32 (WHOLE SEC.); SEC. 33 (WHOLE SEC.); SEC. 34 (WHOLE SEC.).—All rough, rolling land rising from 2,000 to 2,600 feet above the South Thompson valley; generally timbered with jack pine, fir, spruce, bull pine, poplar, and birch; a number of ponds and small lakes exist throughout with a few marshes; all too high for successful cultivation; soil usually a stony, sandy loam with rock in places; good grazing land; following have probable lumber value: W. $\frac{1}{2}$ sec. 32 and all of secs. 33 and 34.

SEC. 35 (WHOLE SEC.).—Rough broken slopes rising from 1,500 to 2,600 feet above the North Thompson river; soil, stony loam; open in SE. part of section, scattering fir and bull pine to 20 inches with occasional tree to 36 inches, over large part, scrub in places, timber is of probable value in NE. and NW. quarters; all fair grazing land.

SEC. 36, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$.—Steep broken slopes falling towards the North Thompson river and 1,400 to 2,000 feet above it; light clay loam, stony; of no agricultural value; fairly well timbered with fir and bull pine to 30 inches diameter, in small scrubby poplar and willow in places, of probable timber value; fair grazing land.

SE. $\frac{1}{4}$.—Rolling slopes of open land with some scattering fir and bull pine, also poplar clumps; 900 to 1,500 feet above the North Thompson river; soil, light clay loam, very stony; small areas of workable land of about 20 per cent farm value; good grazing land.

Tp. 22, R. 18, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

Much of this township is below 4,000 feet above sea, but very little land of value agriculturally is found in it. At present the township forms the SE. part of the Tranquille forest reserve. A high ridge running from sec. 5 to sec 33 forms a divide draining water both east and west in numerous streams. Lakes exist in secs. 3, 5, 6, 11, and 21 forming reservoirs for streams flowing from them. For conservation of water the township is well adapted being generally thickly timbered. Some open areas exist in the SE. and SW. parts.

SECS. 1, 2.—A steep, broken, hilly area having slopes to Dairy creek which flows through; useless agriculturally; 2,200 to over 3,700 feet in altitude above sea; thickly timbered except a small area in NE. $\frac{1}{4}$ of sec. 1 which is open, much fir and bull pine to 24 and 36 inches diameter, of good quality in parts, scrub poplar and willows, lumber value in N. $\frac{1}{2}$ of sec. 1 and S. $\frac{1}{2}$ south of Dairy creek, and NW. $\frac{1}{4}$ of sec. 2; poor to fair grazing.

SEC. 3, SE. $\frac{1}{4}$.—Broken by lake; some meadow land; rough and hilly slopes; no agricultural value; some fir to 24 inches, scrub; fair grazing.

SEC. 3, N. $\frac{1}{2}$, SW. $\frac{1}{4}$; SEC. 4.—Stony slopes, broken in places; sandy loam, some black loam; parts workable but no farm value as a whole; parts hilly, 3,260 to 4,425 feet above sea; NW. part of sec. 4 becomes precipitous and rocky; some open land in lower slopes, fir scattering to 30 inches diameter, with scrub, timber is of probable lumber value in parts, fair grazing.

SEC. 5.—Generally steep, broken, and rocky slopes and all useless for farming except a small area around Pass lake in SW. $\frac{1}{4}$ of sec. 5; fir to 24 inches of possible value, a few bull pine to 20 inches, jack pine and scrub; fair grazing.

SEC. 6, SE. $\frac{1}{4}$.—Made fractional by Pass lake; some workable slopes of sandy loam, of farm value with water; some black loam; steep slopes rise NE. and SW.; 3,100 to

3,685 feet above sea; some fir and bull pine to 24 inches, jack pine and small growth; poor to fair grazing.

SW. $\frac{1}{4}$.—Steep hillside with a narrow workable strip along north side; rises south in broken slopes and steep with much rock; 3,100 to 3,940 feet above sea; jack pine with some fir and poplar, usually small and not over 20 inches diameter; rather poor grazing.

NW. $\frac{1}{4}$.—Rolling slopes, generally workable rising to NE.; stony loam; 3,050 to 3,700 feet above sea; fair farm value with irrigation; generally jack pine and poplar growth, with some fir and bull pine; fair grazing.

NE. $\frac{1}{4}$.—Small area workable in L.S. 10, then steep slopes to NE. rising to 4,390 feet above sea; often rocky; some fir to 24 inches diameter, and some bull pine, jack pine and scrub, poor timber value; grazing fair.

SEC. 7.—Rolling, broken slopes, parts rocky rising to the east; 3,500 to 4,455 feet above sea; part of L.S. 4 has possible farm value if altitude is not too high, rest is too high and broken; sandy loam soil; small jack pine with willows and poplar, a few fir, no lumber value; fair grazing land.

SECS. 8, 9, 15, 16, 17, 18.—Nearly all over 4,000 feet above sea and reaching over 4,600, lowest part over 3,800 feet; a hilly, rolling, broken country; much rock; mainly jack pine, 8 to 12 inches diameter and growing thickly in more or less windfalls, some scattered fir and a few spruce and balsam, much scrub in parts, south $\frac{1}{2}$ of sec. 8 has possible timber value; grazing of poor to fair value.

SEC. 10.—Rolling slopes rising to the NW. with parts hilly and broken, no agricultural value, 3,585 to 4,075 feet above sea; sandy loam with some black loam; stony and rocky; much small growth of jack pine, fir, and poplar with some fir to 24 inches; grazing usually fair.

SEC. 11.—Rolling slopes, parts broken and hilly; much rock; steep slopes to lake in E. $\frac{1}{2}$; no agricultural value; 3,500 to 3,880 feet above sea; much fir to 24 inches with small fir, jack pine and poplar, windfalls and scrub; fair grazing.

SEC. 12, W. $\frac{1}{2}$, SE. $\frac{1}{4}$; SEC. 13, SW. $\frac{1}{4}$.—A rocky rolling area generally, some workable parts too high for farm value; steep slopes to southeast in SE. $\frac{1}{4}$; 3,055 to 3,700 feet above sea; soil is a brownish loam with some black loam; jack pine and small fir, some good lumber fir to 24 inches and a few to 48 inches; some bull pine in SE. $\frac{1}{4}$ of sec. 12; fair grazing.

SEC. 12, NE. $\frac{1}{4}$; SEC. 13 SE. $\frac{1}{4}$.—Much workable slope; 3,100 to about 3,600 feet above sea; parts rocky and rough; brownish loam with some surface black loam in parts; fair farm value if irrigation is applied; much fir to 24 inches, some larger, with jackpine and poplar and willow scrub; fair grazing.

SEC. 13, NE. $\frac{1}{4}$.—Steep slopes to Macaulay creek flowing through; timbered with fir to 24 inches and larger, and some bull pine, much small growth and scrub of various kinds; grazing is fair.

SEC. 13, NW. $\frac{1}{4}$; SEC. 14, NE. $\frac{1}{4}$.—Gently rolling slopes with steep slopes towards Macaulay creek in northeast corner of NE. $\frac{1}{4}$; sandy loam, stony, some black loam; parts of probable farm value, irrigation could be obtained from Macaulay creek; much fir to 24 inches, with jack pine, poplar, and willows, some spruce; poor grazing.

SEC. 14, SE. $\frac{1}{4}$, W. $\frac{1}{2}$.—Rolling slopes rising to the west, 3,640 to over 4,000 feet in altitude; no agricultural value; stony loam soil; timbered with jack pine principally, with much scrub growth, some fir and spruce; poor to fair grazing.

SECS. 19 TO 22, 26 TO 35.—No part below 3,800 feet above sea, and nearly all over 4,000 feet, parts rise to over 4,500 feet in altitude; rolling country with some sharp hills and slopes with parts broken and rocky; a few small marshes; lumber consists of jack pine mainly, 8 to 12 inches in diameter and growing thickly in more or less windfall, a few fir scattered in parts, some spruce and balsam to 16 inches diameter in the north part; grazing is of poor value usually, pine grass is the sole variety and in parts is very scant.

SEC. 23.—Usually gently rolling slopes with parts broken; 3,385 to 4,120 feet above sea; much workable; sandy loam, usually stony, parts black loam; generally too high for farm value, SE. $\frac{1}{4}$ has some land in east of fair farm value if it is not too high; jack pine and a few spruce, some fir to 20 inches diameter; poor grazing.

SEC. 24, S. $\frac{1}{2}$.—Generally workable slopes of sandy loam with some black loam; 3,080 to 3,500 feet above sea; fair farm value if irrigated, streams flowing through could be used; altitude of parts makes value doubtful; fir to 24 inches, some larger, likely lumber value, much scrub growth, some jack pine; poor to fair grazing.

SEC. 24, N. $\frac{1}{2}$; SECS. 25, 36.—Gently rolling slopes of good workable land with exception of E. $\frac{1}{2}$ of sec. 26 and NE. $\frac{1}{4}$ of sec. 25, rendered of no value agriculturally owing to the altitude, 3,540 to over 4,000 feet above sea; sandy loam soil with much black loam in places; jack pine, poplar, and scattering fir cover the surface, some scrub growth, some of fir reach 30 inches diameter; N. $\frac{1}{2}$ of sec. 24 and SE. $\frac{1}{4}$ of 25 have probable lumber value; fair grazing, becoming very poor in north parts.

Tp. 23, R. 18, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

Consists of a fractional township in the north limit of the railway belt and is in the north part of the Tranquille forest reserve. The entire area is over 4,000 feet above sea, parts reaching 6,000 in the northwest part. This altitude leaves no possibility of agricultural land within its limits. The northwest portion consists of an irregular rise to the northwest with much rock in parts and covered with a dense growth of jack pine to 10 inches diameter, some larger, and frequent balsam and some spruce reaching 24 inches in a few instances. Windfalls are common with small scrub and some patches of brulé. There are a few small marshes and a little pine grass, but the country is not of grazing value.

Sections 5, 6, 7 and 8 have thick jack pine to 12 inches diameter with spruce and balsam in parts. A few fir to 18 inches grow scattering. There is much dense scrub and windfall.

The southeast part, including secs. 1 to 4 and 9 to 15, is a rolling country with many ridges which are often rocky. All is timbered with a dense growth of jack pine to 10 inches diameter, some larger, with a few balsam and spruce. Much scrub growth exists, and some of the ridges have occasional fir. Fir is found also on some of lower altitude, and frequent poplars to 12 inches diameter are also met with.

Much of the lumber, although of small diameter, is of fair quality, being straight and not of a scrubby kind.

Some grass grows in parts, but is not in sufficient quantity for grazing purposes.

The township is the source of some small streams which supply water to Jamieson creek on the east and is valuable for the conservation of water supply.

Tp. 17, R. 19, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

The entire township is over 4,000 feet in altitude. The valley of Meadow creek flowing out of Trout lake divides it into two general slopes. Some good workable land exists along Meadow creek, but the altitude bars agricultural value. The lands taken up are for wild marsh hay solely, and for ranching purposes.

SECS. 1, 2, 3, 4, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 21, S $\frac{1}{2}$ (FRAC.); SECS. 22, 23, 24, 27, S. $\frac{1}{2}$; 26, S. $\frac{1}{2}$, NE. $\frac{1}{4}$; 25.—The entire area is 4,150 to over 5,000 feet in altitude above sea; rises rapidly from the valley of Meadow creek; parts in rolling, easy slopes, and again steep and precipitous; surface is rolling, rough and broken, hilly and rocky in parts; some small meadows and muskegs exist throughout; dense growth of jack pine, much of it small and scrubby, and some running to 14 inches diameter, some spruce to 16 inches in depressions, much scrub and usually dense windfalls; with the exception of some of the lower quarters, the grazing has little or no value.

SEC. 19, S. $\frac{1}{2}$.—Rolling, easy slopes; 4,100 to 4,300 feet above sea; dry sandy loam; jackpine to 14 inches, and scrub of different kinds, some windfalls; fair grazing.

SEC. 20, N. $\frac{1}{2}$; SEC. 19, N. $\frac{1}{2}$ (FRAC.).—Some meadow and marsh land along a creek tributary to Meadow creek; rest gently rolling slopes of dry sandy loam; 4,105 to 4,250 feet in altitude; parts open; jack pine to 14 inches, various varieties of scrub; fair grazing.

SEC. 20, S. $\frac{1}{2}$ (FRAC.).—Meadow creek flowing southwesterly through a muskeg; slopes rise on each side, often steep, 4,170 to 4,650 feet above sea; useless for farming; jack pine to 14 inches, much scrub growth and windfall; fair grazing.

SEC. 21, N. $\frac{1}{2}$ (FRAC.); SEC. 28, S. $\frac{1}{2}$ (FRAC.).—Gently rolling valley, through which flows Meadow creek; slopes rise rapidly to the north and south; some good black soil; 4,170 to 4,500 feet in altitude; useless for farm land; jack pine to 14 inches, and scrub; poor to fair grazing.

SEC. 27, N. $\frac{1}{2}$; SEC. 26, NW. $\frac{1}{4}$.—Largely workable slopes, with some flat land and marsh along Meadow creek; parts hilly; 4,180 to 4,450 feet above sea; too high for farm value; some good wild slough hay; jack pine to 14 inches, and scrub; fair to good grazing.

SEC. 28, N. $\frac{1}{2}$; SEC. 29, NE. $\frac{1}{4}$.—Rolling slopes rising to the north, 4,180 to 4,450 feet above sea; jack pine to 12 inches and scrub with some fir to 36 inches in north part, a few trees larger; fair pine grass grazing.

SEC. 29, S. $\frac{1}{2}$.—Gradual slopes of sandy loam, parts stony; 4,105 to 4,280 feet above sea; small jack pine to 10 and 12 inches, scrub and some windfalls; fair grazing.

SEC. 30, S. $\frac{1}{2}$.—Gently rolling slopes, rising to the north from a strip of meadow in the south part; parts open; sandy loam, often stony; 4,100 to 4,365 feet above sea; jack pine scattering, with some scattered fir 24 inches diameter to the north, of probable value, some scrub and windfalls; good grazing.

SEC. 29, NW. $\frac{1}{4}$; SECS. 30, 31, 32, 33.—Rolling slopes rising to the north, with parts broken and steep, 4,135 to over 4,800 feet above sea; scattered fir to 30 inches diameter, and usually of merchantable value, jack pine to 10 inches diameter, with small scrub fir, poplar, willow, and some windfall; fair to good grazing.

SEC. 34 (FRAC.).—Large lake in this section; surface is rolling and broken; 4,355 to about 4,500 feet above sea; much jack pine and scrub, with a few fir to 48 inches in some cases; fair to good grazing.

SEC. 35, N. $\frac{1}{2}$, S. $\frac{1}{2}$ (FRAC.).—Rolling slopes, parts broken rising north from Trout lake; 4,200 and upwards above sea; jack pine predominant and usually of small dimension, scrub and windfalls, some good fir in S. $\frac{1}{2}$, to 5 feet in some cases but usually not over 24 inches; fair to good grazing.

SEC. 36 (FRAC.).—Trout lake occupies large area; slopes rise north and south; all over 4,200 feet in altitude; jack pine to 12 inches, and scrub poplar, willow, etc., windfalls; fair grazing.

Tp. 18, R. 19, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

The slopes to Choo-whel mountain occupy the greater portion of this township. This mountain is located in the NW. part and is over 6,000 feet in altitude. No land of possible agricultural value exists on account of the high altitude, which is all over 4,200 feet, with the exception of the NE. corner which drops a little below 4,000 feet above sea. As a rule the area is rolling and hilly with many parts broken and rocky. Numerous small streams have their sources in marshes and muskegs. A few small lakes occur in the SW. part. A graded road from Kamloops to Trout lake passes through secs. 1 and 12. The whole is densely timbered, jack pine being predominant and ranges from scrub size to 15 inches diameter. Much windfall and dead timber exists and evidence of old brulé is seen in parts. The west slope of Choo-whel mountain has a great deal of dead timber. The following areas have much good fir reaching 24 inches in diameter which should be of merchantable value: S. $\frac{1}{2}$ of secs. 3, 4, 5, and

6, sec. 2, part of sec. 1, secs. 12 and 13. On the following parcels fir occurs in isolated patches on ridges, secs. 24, 25, 36, 26, and 35. Occasional fir are seen on other lower slopes but in too few numbers to be of value for logging. Much scrub and thick wind-fall occur in parts and a few spruce are also seen. Grazing value is confined to secs. 1 to 6, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35, and 36, and is often poor. In the balance of the township there is some grass, but nature of the country gives it a very poor grazing value and it cannot be well called of grazing value.

Tp. 19, R. 19, W. 6th Mer. *A. V. Chase, D.L.S., 1910.*

A great deal of this township is composed of rocky heights and steep slopes about one-third of the whole area being of this nature and above 4,000 feet, finding a summit on Green mountain. Very little workable land of any kind is found in the undisposed of parts, and such land as is workable is in general of very dry nature. A good deal of steep rocky parts are found in the areas of low elevation. Two creeks of fair size occur, Cherry creek and Alkali creek, which give a fair flow of water as late as the month of August. Timber value as a whole is fair.

SEC. 1.—From 3,610 to 3,900 feet above sea, high, rocky and very broken; fir to 24 inches diameter, and jack pine to 10 inches, possible lumber value; fair grazing.

SECS. 2, 3, 4.—From 3,830 to 4,500 feet above sea; high, rocky and broken country of no agricultural value; considerable old burn covered with much small brush and jack pine, with some rather open stretches, a few fir to 24 inches diameter found in north parts, no lumber value; poor grazing.

SECS. 5, 6.—In general over 4,500 feet above sea; not much value of any kind; small timber as a rule, jack pine, some small spruce, and poplar; fair grazing in parts.

SECS. 7, 8, 18, 17, 19, 20.—These sections are all in the vicinity of Green mountain and range from elevation of 4,000 to probably nearly 6,000 feet above sea; they are composed almost entirely of steep rocky slopes; some bare rock open places and old burn, with fallen timber are found, only scattered timber of lumber value exists, a few scattered fir in the lower elevations of this area, abundance of small jack pine is met with and occasionally some spruce up to 16 inches; grazing is poor in general.

SEC. 9.—Over 4,000 feet above sea; no agricultural value; a fair timber section in fir to 24 inches in diameter, some jackpine; grazing is rather poor.

SEC. 10.—In general over 4,000 feet above sea; high rolling country of no agricultural value; possible value in fir to 24 and 30 inches diameter, with a good deal of small jackpine; grazing poor.

SECS. 11, 12.—From 3,320 to 4,250 feet above sea; high, rolling, and rocky country of no agricultural value; some old burn near south boundary; in general fair timber value, fir to 30 inches diameter, mostly to 18 inches, some jack pine toward south boundary; grazing poor to fair.

SEC. 13.—From 2,780 to 3,320 feet above sea level; rolling land with scattered workable patches of small area, needing water; fir to 20 inches, in good quantity in parts, and a great deal of small growth 2 to 4 inches of fir, jack pine, and some poplar; grazing poor.

SEC. 14.—From 2,840 to 3,900 feet above sea; very rolling and steep; some small workable patches needing water; a dried up alkaline pond in NE. $\frac{1}{4}$; there is possible lumber value on the SW. $\frac{1}{4}$ in fir to 30 inches, with some bull pine, but the remainder is rather open with only scattered timber; rather fair grazing.

SECS. 15, 16.—From 3,080 feet in creek bottom to about 4,500 feet above sea on west boundary of sec. 16; very steep slopes especially along the creek valley in sec. 15; to the west the land rises quickly toward Green mountain, nearly all of sec. 16 being over 4,000 feet; there is no workable land herein; the timber value, however, is fair, fir running from 24 to 30 inches diameter in considerable number;

in the west part of sec. 16 jack pine in clumps is common among the fir; grazing is badly eaten off, needing a couple of years' rest for complete recovery.

SECS. 21, 22, 23.—While as low an elevation as 2,400 is found here, the land is still very steep and precipitous, is rocky in secs. 21 and 23, and reaches an elevation of 4,460 at southwest corner of sec. 21; some small flats are found in the E. $\frac{1}{2}$ of sec. 21, which might be worked with abundance of water, it is understood, however, that the records on Cherry creek exceed its present capacity; secs. 21 and 22 are good timber sections, fir from 24 to 30 inches being present in considerable quantity, with scattering jackpine to 16 inches, and some bull pine. The timber value runs out to the east, and is doubtful in sec. 23; fair grazing in general.

SEC. 24.—From 2,400 to 2,840 feet above sea; gently rolling land of rather sandy soil, gravelly in places; needing irrigation; scattering bull pine to 28 inches diameter and some fir to 24 inches, with a lot of small fir; grazing poor.

SEC. 25 (FRAC.); 26, NE. $\frac{1}{4}$.—From 2,180 to 2,570 feet above sea; gently rolling land, rather dry and of gravelly nature; workable in parts with abundance of water; scattered bull pine to 30 inches diameter, some jack pine to 20 inches, and occasional fir; fair grazing.

SEC. 27, S. $\frac{1}{2}$.—From 2,200 to 2,990 feet above sea; very steep land, no agricultural value; fair fir to 18 inches, with some smaller growth; grazing fair.

SEC. 28.—From 2,340 to 3,600 feet above sea; very steep and broken, rocky in places; no agricultural value; fir to 24 inches diameter, somewhat scattered, with much smaller fir to 4 inches, small amount of jack pine in N. $\frac{1}{2}$; poor grazing as a whole.

SEC. 29.—From 3,000 to 4,100 feet above sea; very similar to sec. 28; rocky and very broken; no agricultural value; considerable fir from 18 to 24 inches diameter, with much small growth to 6 inches, doubtful lumber value; fair grazing.

SEC. 30.—From 3,670 to 4,360 feet above sea; steep, rocky section, no agricultural or timber value, covered mostly with small growth of poplar, willow, birch, fir and jack pine brush; poor grazing.

SEC. 31.—From about 2,400 to 3,670 feet above sea; some flat land, but very dry; probably one-half the area of the N. $\frac{1}{2}$ of section workable; light loam soil, but occurs in patches and is useless without water; S. $\frac{1}{2}$ is mostly steep slopes; scattered fir to 20 inches diameter in brush, with some poplar; good grazing.

SEC. 32.—From 2,400 to 3,480 feet above sea; N. $\frac{1}{2}$ is gently rolling land of workable light loam soil, but high and very dry; bull pine to 30 inches diameter, with scattered fir, doubtful lumber value; poor grazing; S. $\frac{1}{2}$ is broken and rocky, a rock ridge; no agricultural value; covered with scattered fir to 24 inches with a good deal to 6 inches, few bull pine; poor grazing.

SEC. 33 (FRAC.).—(Undisposed of part).—From 2,200 to 2,900 feet above sea; rolling land, rather stony, very doubtful value agriculturally; some value in bull pine to 24 inches diameter, and scattered fir; poor grazing.

SECTION 34.—(Small portion along south boundary undisposed of).—From 2,100 to 2,340 feet above sea; rolling stony land; doubtful value even with much water; few scattered bull pine to 20 inches diameter; rather poor grazing.

SEC. 35 (FRAC.).—From 2,100 to 2,400 feet above sea; open grazing land; rolling with dry gravelly soil; would need much water for agricultural value; fair grazing.

SEC. 36 (FRAC.).—Mostly taken up by mining claims; generally rocky; small workable areas of no value; open country; grazing only.

Tp. 19, R. 19, W. 6th Mer. *A. V. Chase, D.L.S., 1910.*

This district is composed almost wholly of very steep and rolling land, the workable areas being small and very scattered. Very little cultivation was found in range 20, and those settlers engaging in it depend entirely on irrigation for success. Most of the cultivation is carried on at an elevation of less than 2,100 feet above sea-level.

but in Three-mile creek valley are a few quarter sections where the growing of grain and vegetables may be successful up to an altitude of 2,900 feet. The natural contour of the ground here seems to be a factor in the success or failure of vegetable growth. At the junction of the two branches of Three-mile creek there occurs, during the summer, enough frost at an elevation of only 3,100 feet to make vegetable and root crops of doubtful success, while to the north in the greater protection of the valley these crops flourish although at only a slightly lower altitude. It is in this locality that a small area of workable land is undisposed of within the Long Lake forest reserve. In township 20, range 20, all the land for which there is any possible water supply, with the exception of a small strip along Three-mile creek valley and a portion along Duffy creek, has been disposed of. The country while not over 3,500 feet in altitude is almost without exception rolling and precipitous, though the workable patches which are all of very dry soil are so situated among the slopes that even if water were available profitable irrigation would be almost impossible. Timber value in this range is considerable, more especially within timber berth No. 420, very fine. ranges of fir to 36 inches in diameter, with scattered good bull pine, being the rule. Timber value runs out towards the south half of township 19, range 20, and there is little timber in the lower altitudes toward Kamloops lake. Grazing varies from poor in the lower altitudes to fair on the heights of green timber where there are fair quantities of timber grass. A very good range is found along the upper valley of Three-mile creek. South of this it becomes poor in the tracts of small jack pine. The undisposed-of lands in townships 19 and 20, ranges 18 and 19, south of Thompson river are very similar in character as far as natural contour goes. A summit is found on Green mountain in the southwest part of township 19, range 19, at an elevation of possibly 6,000 feet above sea-level, from which the lands slope to the valley of Cherry creek. Other summits are found on Choo-whel mountain to the south of township 19, range 19, on Sugar Loaf hill at an elevation of 3,470 feet from which the lands slope respectively to Cherry creek valley, Alkali creek valley and the basin of Jacko lake and Peterson creek. The land under cultivation in this area, with the exception of certain tracts of bottom-land of moist dark loam soil, is dependent on irrigation for successful results. It is quite evident, however, that dry culture is being experimented with in township 19, range 18, as several homesteads have been entered. The natural position of the land makes irrigation impossible as no water is apparently available for household purposes. Many and varied are the opinions expressed by the settlers as to the possibility of profitable agriculture as carried on in the high lands of Rose hill locality. They are all more or less contradictory, save on the one point that, except in bottom-lands between hills, which by reason of their position collect considerable moisture, the crops are at present a failure. Opinions of several settlers who have been in this locality and to the south for the past fifteen or twenty years, are unanimous on this point. The elevation of undisposed-of lands fit for agriculture is in general in the neighbourhood of 2,900 to 3,000 feet above sea-level. The timber value here is less than to the west, and while much of the land is timbered, a great deal of jackpine scrub and old burn is met with. Timber berths Nos. 420 and 330 have apparently been outlined with some care as they include practically all the timber of value in ranges 18 and 19 in this area. The herbage is badly eaten off, especially in township 19, range 19, and most of the land in township 19, range 18, which formerly afforded good grazing on bunch-grass, have been disposed of. Considerable rain fell in this area during the month of September with very little extreme temperature except at high altitudes.

Tp. 20, R. 19, W. 6th Mer. *A. V. Chase, D.L.S., 1910.*

SOUTH OF THE THOMPSON RIVER.—Only a very small portion of this part of the township is undisposed of. A small irregular area of about one square mile fronting on Kamloops lake in secs. 19 and 20 is of steep rolling character, composed of bluffs

and cut banks. It is of very little value of any kind and is not described in detail. An area of three square miles in extent is found in the SW. corner, not yet disposed of. Very little agricultural value is found here although some workable flats are met with.

SEC. 5.—From 1,970 to about 2,400 feet above sea; rolling country, in places steep and rocky; unfit for agricultural purposes; fair growth of bull pine to 30 inches diameter, jack pine to 18 inches, and some fir to 20 inches, better timber has been cut; poor grazing.

SEC. 6.—From 2,000 to 2,700 feet above sea; rather flat in the N. $\frac{1}{2}$, with light loam soil, workable to some extent but very dry and needing water for cultivation; remainder, steep slopes, covered more or less with a good growth of fir and bull pine to 30 inches diameter and some jack pine; poor grazing.

SEC. 7, S. $\frac{1}{2}$.—From 1,920 to 2,300 feet above sea; small flats of light loam soil are met with, but these are of small acreage and could not be profitably worked without abundance of water; sparsely covered with bull pine and jack pine to 24 inches diameter; poor grazing.

SEC. 8, S. $\frac{1}{2}$.—In general only fit for grazing some small alkaline flats among rock; scattered bull pine and fir; poor grazing.

R. D. McCaw, D.L.S., 1909.—SEC. 25, SE. $\frac{1}{4}$ (FRAC.).—Broken, worthless, rocky slopes to Kamloops lake.

NE. $\frac{1}{4}$.—Open, broken land generally, with some rolling land in north part; 400 to 800 feet above Kamloops lake; soil sandy loam with much stone and many outcrops; greater part of quarter is worthless; small area of fruit land in north part, needing irrigation which may be obtained with difficulty from Tranquille river.

NW. $\frac{1}{4}$ (N. $\frac{1}{2}$).—Rather rough, open bench land 250 to 485 feet above Kamloops lake; soil sandy loam with much small broken rock in places, stony in places; a large part is suitable for fruit but needs irrigation, which may be obtained with difficulty from Tranquille river, 40 per cent fruit land.

SEC. 26, NE. $\frac{1}{4}$ (FRAC.), NW. $\frac{1}{4}$ (FRAC.), SW. $\frac{1}{4}$ (FRAC.).—All very much broken land rising from Kamloops lake, rocky and stony; scattering bull pine and fir in places of rather scrubby variety; very scant grazing.

SEC. 27, NW. $\frac{1}{4}$ (FRAC.), NE. $\frac{1}{4}$ (FRAC.), SE. $\frac{1}{4}$ (FRAC.).—Steep broken slopes, very rocky, rising to 1,150 feet above Kamloops lake; scattering fir and bull pine on high lands; scant grazing land except NW. $\frac{1}{4}$, which has much worthless rock slope.

SEC. 32, NE. $\frac{1}{4}$.—Bench land from 845 to 900 feet above Kamloops lake east part fairly level; west part broken; soil clay loam, stony in places; some scattering fir and bull pine to 24 inches; large portion is 30 per cent fruit land, needs irrigation which is difficult to obtain.

SEC. 33, NW. $\frac{1}{4}$ (S. $\frac{1}{2}$), SW. $\frac{1}{4}$, SE. $\frac{1}{4}$; SEC. 34, SW. $\frac{1}{4}$, SE. $\frac{1}{4}$ (PART).—Generally broken, rocky slopes with steep worthless rock slopes along the lake; part of land has fair grazing; 850 to 950 feet above Kamloops lake; north part of SE. $\frac{1}{4}$ of sec. 34 has a fair area of 50 per cent farm land which needs irrigation; bull pine and fir scattering throughout but of unlikely merchantable value.

SEC. 33, NE. $\frac{1}{4}$ (FRAC.); SEC. 34, NW. $\frac{1}{4}$ (N. $\frac{1}{2}$), L. SUB. 10.—Bench land below steep rocky mountain side 850 to 950 feet above Kamloops lake; soil clay loam; 50 per cent farm land, needing irrigation which is difficult to obtain; a few bull pine and fir; slopes rising in sec. 34 are worthless.

SEC. 36, NE. $\frac{1}{4}$.—Much broken sloping bench land, 600 to 1,000 feet above Kamloops lake; sandy loam, often very stony; some scattering fir and bull pine, but generally open; east part possible fruit land, but needs irrigation, which can be obtained from Tranquille river; steep worthless slopes on west side.

SE. $\frac{1}{4}$.—Rather rough, open, sloping bench land, 485 to 1,000 feet above Kamloops lake; sandy loam soil, with much small broken rock in places and usually stony; a large area is suitable for fruit, but needs irrigation, which may be obtained with difficulty from the Tranquille river, 40 per cent fruit land.

SW. $\frac{1}{4}$.—Much rough, broken, open slopes to Tranquille river, with some bench land in SE. corner; 250 to 500 feet above Kamloops lake; sandy loam, generally stony; a few scattering bull pine; SE. part 40 per cent fruit land, needing irrigation which may be obtained from Tranquille river with difficulty; slopes along Tranquille river are worthless.

Tp. 21, R. 19, W. 6th Mer. *R. D. McCaw, D.L.S., 1909.*

SEC. 4, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Bench land sloping back to steep mountain which rises in north part, 850 to 1,000 feet above Kamloops lake; soil, clay loam, stony in places; open, with scattered fir and bull pine up to 24 inches; 50 per cent farm land, needs irrigation which will be difficult to obtain.

SEC. 5, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Strip of gently rolling slope running through both quarter sections rising in steep rocky slopes in NE. part of NE. $\frac{1}{4}$ and running into broken land in west part of SE. $\frac{1}{4}$, 885 to 1,335 feet above Kamloops lake; much open land, with scattering fir and bull pine, some of which is fair value; 50 per cent farm land, needing irrigation, which will be difficult to obtain; broken part has fair grazing.

NW. $\frac{1}{4}$.—North part gently rolling slopes, south part broken, with rocky ridges, 1,180 to 1,350 feet above Kamloops lake; clay loam soil, stony in places; scattering bull pine and fir to 24 inches diameter; north part 50 per cent farm land, requiring irrigation which will be difficult to obtain; all is fair grazing.

SEC. 5, SW. $\frac{1}{4}$; SEC. 6, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—All much broken slopes, very rocky, rising to 1,000 feet above Kamloops lake; stony loam soil; scattering fir and bull pine of small value; fair grazing in patches throughout.

SEC. 6, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$.—The south half of these sections is much broken, while north half contains much workable land on slopes and in depressions; 940 to 1,300 feet above Kamloops lake; sandy and clay loam, stone and rock in places; fir and bull pine to 20 inches, much of timber has been logged and remainder is not of very profitable value; N. $\frac{1}{2}$ is about 25 per cent farm land, needing irrigation which is difficult to obtain; all is fair grazing.

SEC. 7, SW. $\frac{1}{4}$ (S. $\frac{1}{2}$), SE. $\frac{1}{4}$ (S. $\frac{1}{2}$); SEC. 8, SW. $\frac{1}{4}$ (S. $\frac{1}{2}$).—Rolling bench land broken in places, 1,100 to 1,400 feet above Kamloops lake; soil, clay and sandy loam; stony and rocky and rising in steep hill at north; some fir and bull pine of poor value; 50 per cent farm land, needs irrigation which is difficult to obtain.

SEC. 1, NE. $\frac{1}{4}$, SW. $\frac{1}{4}$, NW. $\frac{1}{4}$; SEC. 11, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$ (E. $\frac{1}{2}$), NW. $\frac{1}{4}$ (E. $\frac{1}{2}$); SEC. 12, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$, SE. $\frac{1}{4}$ (W. $\frac{1}{2}$).—All steep broken slopes running into Tranquille river, of no agricultural value; fir and bull pine scattering throughout, having diameter up to 24 inches, and of probable value in northeast, southeast and northwest quarters of sec. 12; all of fair grazing value.

SEC. 13, SE. $\frac{1}{4}$.—Small area of workable slopes in SE. corner rising in steep broken slopes to NW., 1,360 to 1,900 feet above Kamloops lake; soil, light clay, stony, rock on hill side; fir and bull pine of rather poor quality; SE. corner 25 per cent farm land, may be irrigated from DuBois creek; rest of quarter is fair grazing land.

SEC. 13, NE. $\frac{1}{4}$ (S. $\frac{1}{2}$), NW. $\frac{1}{4}$ (S. $\frac{1}{2}$), SW. $\frac{1}{4}$; SEC. 14 (WHOLE SEC.); SEC. 15, NE. $\frac{1}{4}$; SEC. 22, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$ (E. $\frac{1}{2}$).—Steep, broken slopes falling to Tranquille river, in altitude from 500 to over 2,000 feet above Kamloops lake; much rock in places; scattering growth of fir and bull pine, generally scrubby and of low merchantable value, fair grazing throughout, timber in sec. 22 is of probable value.

SEC. 22, NE. $\frac{1}{4}$.—Rolling bench land on east side of Tranquille river, soon rising in steep broken slopes; on west side of river steep broken slopes rise; altitude of bench land about 1,030 feet above Kamloops lake; brown loam soil with gravelly subsoil, rock appears on steep slopes; fir and bull pine to 24 inches diameter, of possible lumber value; bench land 25 per cent farm value, irrigation may be obtained from Watching creek.

SE. $\frac{1}{4}$.—Small area of bench land in NE. corner; rest of land is steep broken slope; altitude of bench land is from 900 to 1,000 feet above Kamloops lake; brown loam with gravelly subsoil; fir and bull pine to 24 inches diameter, of possible lumber value; fair grazing on slopes; bench land about 50 per cent farm value; irrigation may be obtained from Watching creek.

SEC. 23, SW. $\frac{1}{4}$ (W. $\frac{1}{2}$).—Bench land 900 to 1,000 feet above Kamloops lake, with steep slopes rising in east part; soil, brown loam, stony in parts; fir and bull pine to 24 inches, of possible lumber value; slopes have fair grazing; bench land 50 per cent farm land, needing irrigation which may be obtained from Watching creek.

SEC. 23, L.S. 12; SEC. 27, SW. $\frac{1}{4}$, SE. $\frac{1}{4}$ (W. $\frac{1}{2}$).—Rough slopes, rocky and stony, often steep and broken, from 1,100 feet and upwards above Kamloops lake; fir, bull pine and some jack pine, scattering, of possible lumber value; good grazing land.

Jos. E. Ross, D.L.S., 1910.—This township is too rough and broken to require subdivision. At the 'Forks,' which is the junction of Watching creek and Tranquille river, there is part of a quarter section of fairly level land upon which one settler has squatted. The country is generally timbered but fairly open and is suitable only for grazing. Pack-trails are the only approach to anything in the way of roads. Tranquille river, about half a chain wide and two feet deep, traverses the township diagonally in a southeasterly direction. There is very little bottom-land along Tranquille river in this township, the hills sloping down steeply from a height of two thousand feet to the river, which flows through rocky gorges. The lands are suitable only for grazing. The north half of sec. 5 lies on a clay bench 1,000 feet above Kamloops lake, fourteen miles distant from Kamloops on the Kamloops-Savona pack-trail. If water could be procured this land would be suited to fruit raising and agriculture. A good spring provides water for domestic purposes.

Tp. 21, R. 18 and 19, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

Area described consists of the fractions of both townships not examined in 1909. In character the surface is broken and no farm land exists other than what has already been disposed of or reported on. The Tranquille river flowing from NW. to SE. breaks the area into steep slopes while Watching creek and Middle Fork further break the NE. part. The surface is really mountainous there being three main heights: Opal hill, in the NE., part of the Red Plateau between the Tranquille river and Kamloops lake and a rocky hill north of the Tranquille and west of Watching creek. For the purpose of description the area is divided into these three parts.

SEC. 2; SEC. 3 (FRAC.); SEC. 4, N. $\frac{1}{2}$; SEC. 7, N. $\frac{3}{4}$; SEC. 8 (FRAC.); SECS. 9, 10; SEC. 11 (FRAC.); SEC. 15, W. $\frac{1}{2}$, SE. $\frac{1}{4}$; SECS. 16 TO 21; SEC. 22, W. $\frac{1}{2}$ OF SW. $\frac{1}{4}$; SECS. 29 TO 31; SEC. 28 (FRAC. S. OF TRANQUILLE); SEC. 32 (FRAC. W. OF TRANQUILLE); IN TP. 21, R. 19, W. OF 6TH MER.—This area comprises the Red Plateau in this township with its attendant slopes falling towards the Tranquille river and Kamloops lake. The slopes are steep, broken, and rocky with many precipitous cliffs, and rise to above agricultural altitude before they become of a workable nature. The high land is over 4,300 feet in altitude, and is rolling and broken with steep, rocky ravines in places. The timber on the high lands is chiefly jack pine of scrubby variety with windfalls, a few scattering fir exist, the various scrub growth is thick in parts. The slopes to the Tranquille in parts of secs. 21, 28, 29, 31, and 32 have much fir and bull pine on lower slopes to 24 inches diameter, but the quality is poor and the trees usually of a smaller size. On the higher slopes these trees thin out and become only scattering in much jack pine. In secs. 2, 3, and 11 the slopes have bull pine and fir in scattering numbers, very few over 18 inches diameter and of poor value. The same condition exists in N. $\frac{1}{2}$ of sec. 4, S. $\frac{1}{2}$ of sec. 8, and greater part of sec. 7. Throughout the entire area there is more or less growth of scrub. Grazing is poor to fair.

SEC. 13, N. $\frac{1}{4}$; SEC. 14, L.S. 15, 16; SECS. 24, 23 (FRAC.); SECS. 25, 26; SEC. 27 (E. OF WATCHING CREEK); SEC. 35 (E. OF WATCHING CREEK); SEC. 36, IN TP. 21, R. 19, W. 6TH MER., AND SEC. 19, NW. $\frac{1}{4}$; SEC. 30, W. $\frac{1}{4}$; SEC. 31, NE. $\frac{1}{4}$ AND W. $\frac{1}{2}$ IN TP. 21, R. 18, W. 6TH MER.—This area is composed of Opal hill and its steep broken slopes; the main summit of Opal hill is in secs. 25 and 36 and is over 4,500 feet in altitude above sea; a rocky mass with steep slopes and cliffs in parts; the upper surface is rolling and broken, with much small jack pine and a few fir to 24 inches and larger in parts, with scrub and windfalls. The slopes rising from the Tranquille river and Watching creek in secs. 23, 26, and frac. of 27 are broken and steep, becoming more gradual in parts near the 4,000 foot limit; much good fir and bull pine on lower slopes to 24 inches diameter of merchantable value, some scrub; in sec. 35 the slope is very steep and thickly timbered with jack pine and fir, very few over 20 inches diameter; in township 21, range 18 the area is thickly timbered with small growth; grazing is poor to fair.

SEC. 32 (E. OF TRANQUILLE); SEC. 33; SEC. 34 (W. OF WATCHING CREEK); SEC. 27 (FRAC. N. $\frac{1}{2}$); SEC. 28 (FRAC. N. OF TRANQUILLE); SEC. 35 (W. OF TRANQUILLE), IN TP. 21, R. 18, W. 6TH MER.—Composed of a rocky hill with slopes to Tranquille river, Watching creek, and Middle Fork, and the lower slopes of another rocky hill falling from the north to Watching creek and Middle Fork; much bare precipitous rock; some scattering fir and bull pine to 18 inches, of poor quality, some scrub; poor grazing; a small area of poplar land in northwest quarter of sec. 35 could be used for farm land but is very small; the altitude is 2,730 feet above sea; a few small areas of workable valley land occur along Tranquille river but they are too small for value.

Tp. 22, R. 19, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

This township forms a part of the Tranquille forest reserve. The surface as a whole is hilly, and becomes broken in the south and east parts, and a rolling plateau in the north. Some land of farm value exists along Watching creek in secs. 1, 2, and 12. Secs. 4, 5, 6 and 7 also contain good workable slopes, but the altitude makes agricultural value doubtful.

SEC. 1, N. $\frac{1}{2}$.—Much workable slope; sandy loam; easily irrigated from Watching creek; 3,000 to 3,500 feet above sea; has farm value, which is very low; growth consists mainly of jack pine and small poplar, a few fir and bull pine; fair grazing.

S. $\frac{1}{2}$.—Mainly steep precipitous rock slopes falling to the north and ending in broken benches, with some good workable slope in north part and poplar flats along Watching creek in NW. $\frac{1}{4}$; the north parts have farm value; altitude of area is 2,800 to 3,940 feet above sea; soil in workable parts is sandy loam with some black loam; thick growth of jack pine and fir of small dimension on steep slopes and poplar and jack pine on lower parts; fair grazing.

SEC. 2, E. $\frac{1}{2}$, L.S. 3.—Rolling, workable slopes becoming steep, broken and rocky to the west, 2,750 to 3,900 feet above sea; sandy loam with some black loam; poplar flat along creek; fair farm value, easily irrigated; fir to 24 inches and bull pine, scattering, much jack pine and poplar; fair grazing.

SEC. 2, W. $\frac{1}{2}$, except L.S. 3; SEC. 3; SEC. 4, E. $\frac{1}{2}$.—Generally a broken, hilly area with steep slopes; much rock; of no farm value; altitude varies from 3,000 to over 3,900 feet above sea; some parts are workable, but too high; middle fork flows south through central part of sec. 3, and has steep slopes on each side; bare rock in parts; timber is mainly jack pine with much scrub and some windfall, much good fir to 24 inches and a few bull pine of fair value; grazing is fair.

SEC. 4, W. $\frac{1}{2}$.—Largely workable slopes with some flat land; sandy loam soil; 3,300 to 3,780 feet above sea; some marsh land; part has doubtful farm value owing to altitude, water would be required; fir to 30 inches and bull pine to 24 inches, of lumber value, much small timber and scrub; fair grazing.

SEC. 5; SEC. 6, NE. $\frac{1}{4}$.—Large areas of workable slope in all five $\frac{1}{4}$'s; parts steep and broken; 3,100 to 3,540 feet above sea; brownish sandy loam, usually stony and

gravelly, but of rather doubtful value owing to altitude; irrigation would be required but is difficult to apply; scattering fir and bull pine to 36 inches, of fair value, much poplar in parts, some windfalls and jack pine; fair grazing.

SEC. 6, S. $\frac{1}{2}$, NW. $\frac{1}{4}$.—Rough, broken and steep slopes falling to Tranquille river in S. $\frac{1}{2}$; 2,640 to 3,400 feet above sea; areas of workable land small; soil poor and of little value being generally coarse and sandy, with stone; timbered with fir and bull pine of rather poor quality, a few trees to 48 inches, some scrub and jack pine; poor to fair grazing.

SEC. 7, SE. $\frac{1}{4}$.—Part of S. $\frac{1}{2}$ workable slope becoming steep and broken to the north, 3,300 to over 4,000 feet above sea; doubtful agricultural value, would need irrigation; sandy loam soil; some good fir to 36 inches, small scrub and jack pine; poor to fair grazing.

SEC. 7, W. $\frac{1}{2}$, NE. $\frac{1}{4}$; SEC. 8, S. $\frac{1}{2}$.—Steep slopes, often rocky and broken, rising north, no agricultural value, altitude runs to over 4,400 feet in parts; fir to 24 inches, and a few bull pine, some larger, jack pine and scrub, S. $\frac{1}{2}$ of sec. 8 has lumber value; poor to fair grazing.

SEC. 8, N. $\frac{1}{2}$; SECS. 9, 16, 17, 18, 19, 20, 30.—This area nearly all over 4,000 feet above sea, and rising in steep slopes from the south to over 5,000 feet in altitude; the upper altitude is rolling, broken in parts with rocky ravines; on northeast falls to the valley of Middle Fork and its extension northwest; altitude is about 4,900 feet in this depression; thickly timbered with small jack pine, some spruce and scrub poplar, much windfall in parts, scattering fir and a few bull pine to 24 inches on lower slopes to the south; rather poor grazing.

SEC. 10.—Mainly ravine of Middle Fork; 3,685 to over 4,000 feet above sea; rough and broken, no farm land; some *brulé*, a few fir to 24 inches, usually smaller, much jack pine and scrub; fair grazing.

SEC. 11.—Valley runs west through S. $\frac{1}{2}$ rising to steep rock hill towards the north, 3,560 to over 4,000 feet above sea; no farm value, some flat land, parts broken and rocky; much jack pine to 9 inches diameter, a few fir and bull pine to 20 inches diameter; fair grazing.

SEC. 12, SW. $\frac{1}{4}$.—A rocky hill falling into workable slopes to the southeast; 3,100 to 3,600 feet above sea; poor farm value; sandy loam soil; growth chiefly jack pine and scrub poplar and willows, a few fir and bull pine; fair grazing.

SE. $\frac{1}{4}$.—Broken by Watching creek ravine; contains workable slopes of sandy loam, rather stony; 3,100 to 3,600 feet above sea; needs irrigation; rather poor farm value; small jack pine, poplar and willows, no timber over 12 inches diameter except an occasional fir; fair grazing.

SEC. 12, N. $\frac{1}{2}$; SEC. 13.—Watching creek flows south through east part, in deep broken ravine; slopes to west become rolling and workable but are too high for farm value, being from 3,500 to over 4,000 feet in altitude; soil is a sandy loam, rather stony; jack pine to 10 inches, some larger, with much poplar; fair grazing.

SECS. 14, 15, 21, 22, 23, 26 to 29, 31 to 34.—High country rising to over 5,000 feet above sea; southerly part in secs. 14, 15, 23, 22 and 21, rather rough and rolling, with rocky ridges; rest is a gently rolling plateau, falling to a depression in secs. 29 and 31, about 4,900 feet above sea and towards Watching creek in secs. 26 and 34; growth generally small jack pine with patches of windfalls, some spruce and poplar scrub, a few fir scattering in south parts of secs. 14 and 15, much dead standing timber in depression through secs. 29 and 31; some pine-grass, but usually poor grazing.

SEC. 24.—Much broken, and rising to over 4,500 feet above sea; growth is mainly small jack pine, poplar, willows and alder scrub, a few fir, windfalls; fair grazing.

SEC. 25, 36, 35.—All over 4,000 feet above sea and rising to nearly 5,000 feet; rolling, and falling in steep slopes toward Watching creek, which flows southeasterly through sec. 36 and then south through sec. 30 of township 22, range 18; much good

timber in these sections, consisting of jack pine to 18 and 20 inches, with some fir, spruce and balsam to 24 inches, patches of windfalls and small growth; fair growth of pine grass in parts gives grazing value.

Tp. 23, R. 19, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

All lands within this township are well over the 4,000 feet elevation and consequently useless for any agricultural purpose. The land is divided through the south part by the east and west valley of Tranquille river and lake extending to the valley of Watching creek, which runs north about two miles into the township. A great bald summit about section 16 is the point of a ridge running northeasterly and all over 5,500 feet above sea level. North of this a branch of Tranquille river traverses the northwestern part of the township in a northeasterly direction with the land rising again toward the northwest corner of the township.

The township may be described as timbered land with little or no monetary value. In the extreme southeastern part the land is covered with a fairly good growth of pine grass, offering fair grazing for summer range, but as one goes west and north the country becomes very rough with stony and steeply rolling ground. There is no agricultural value of any kind, the small meadows along Tranquille river and lake being of no value owing to their smallness and altitude.

The timber is all of no merchantable value.

Very little fir of any kind is met with, only a few scattered small trees being seen. As most of this area has been burned over at one time, abundance of small and scrub jack pine is met with although along the vicinity of Tranquille river a great deal of the old burnt and dried timber is still standing. Almost all the northern part of the township is covered with the same quality of scrub and small jack pine with patches of poplar brush, though a considerable area on the summit shows little or no timber.

Tp. 24, R. 19, W. 6th (Fractional). *A. V. Chase, D.L.S., 1911.*

All the lands herein are considerably over 4,000 feet above sea level and consequently of no value agriculturally. The land is very rough and hilly, sloping mostly northwesterly toward a branch of Criss creek with a small area on south of divide, sloping toward Tranquille river.

Grazing is rather poor in general and large areas are completely destroyed by fire which has burned the underbrush without destroying all the timber. Timber consists almost entirely of jack pine running from scrub to 10-inch size. A good deal has been burned over and shows areas of dried standing timber with burned underbrush, all of no monetary value.

Tp. 17, R. 20, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

Meadow creek flows in a westerly direction through a rolling valley, in which some areas have been disposed of. The land has been taken up for hay value in meadows along the creek and for ranching purposes, and the settlers who have experimented with grains find them a failure. The altitude ranges from 3,880 to over 4,000 feet above sea in the valley, on land that could be worked.

SECS. 12, 13, 14, 15; SEC. 16, E. $\frac{1}{2}$; SEC. 22, SW. $\frac{1}{4}$; SEC. 23, S. $\frac{1}{2}$ (FRAC.); SEC. 24, S. $\frac{1}{2}$ (FRAC.).—Gradual slopes rising to the south, soon running into rolling hills with a general rise to the south, 4,020 to over 4,900 feet above sea; a great deal of marsh land which, with pine grass, gives fair grazing value; jack pine predominates with a few fir scattered throughout, and the whole has little or no value commercially, windfalls and scrub common; small sloughs numerous

SEC. 16, W. $\frac{1}{2}$; SECS. 17, 19, 20; SEC. 21, W. $\frac{1}{2}$; SEC. 30, S. $\frac{1}{2}$; SEC. 29, S. $\frac{1}{2}$; SEC. 28, SW. $\frac{1}{4}$.—Rather broken hilly country, rising to over 4,900 feet above sea in south

part; many steep slopes and some rocky knolls; usually thickly timbered, much good fir to 24 inches and some larger, becomes thinly scattered in parts, jack pine in large quantity and also much poplar and willow, some windfalls; the whole area seems to be of value for timber; sloughs and marshes are numerous, which with pine grass afford good grazing.

SEC. 21, E. $\frac{1}{2}$; SEC. 22, NW. $\frac{1}{4}$.—Gently rolling slopes 4,060 to 4,400 feet above sea; much good soil, but too high to be of value; some good marsh land having wild hay value; much jack pine to 14 inches and scattering fir to 24 inches, probable lumber value, scrub and windfalls; fair grazing.

SEC. 22, E. $\frac{1}{2}$; SEC. 23, NW. $\frac{1}{4}$ (FRAC.).—Gently rolling; 4,000 to 4,300 feet above sea; sandy loam, some dark soil; some good grass marsh of hay value; jack pine to 14 inches, and scrub, a few fir; too high for agricultural value; good grazing usually.

SEC. 24, N. $\frac{1}{2}$ (FRAC.); SEC. 23, NE. $\frac{1}{4}$ (FRAC.); SEC. 25, S. $\frac{1}{2}$; SEC. 26, S. $\frac{1}{2}$ (FRAC.).—Gradual slopes and gently rolling, becoming steep and broken to north in S. $\frac{1}{2}$ of secs. 25 and 26; 4,015 to 4,425 feet in altitude; parts open; sandy loam with areas of black loam, stony; jack pine with a good deal of fir to north, of good value; windfalls and scrub; fair grazing.

SEC. 25, N. $\frac{1}{2}$; SEC. 26, N. $\frac{1}{2}$; SECS. 35, 36.—Rolling and becoming steep and broken to north; 4,100 to over 5,000 feet in altitude; many deep ravines; rocky; much good lumber, fir to 24 inches diameter and some larger, with a great deal of jack pine and small fir, poplar and willow scrub; fair to good grazing.

SEC. 27, S. $\frac{1}{2}$ (FRAC.).—Much almost level meadow land having value for wild hay, 4,000 feet above sea and a little lower; rest is gently rolling, with jack pine and scrub, some windfalls; good grazing.

SEC. 27, N. $\frac{1}{2}$ (FRAC.).—Gentle slopes of sandy loam, stony, 3,955 to 4,200 feet above sea; too high for agricultural value; parts open, rest has thick jack pine to 12 inches, some poplar and willow scrub; good grazing.

SEC. 29, NE. $\frac{1}{4}$.—Rolling slopes on each side of Meadow creek, 3,935 to 4,120 feet above sea; sandy loam; some good marsh hay; jack pine to 14 inches, and small scrub; fair grazing.

SEC. 29, NW. $\frac{1}{4}$; SEC. 30, N. $\frac{1}{2}$.—Rolling, with parts rocky, broken and steep; 3,935 to 4,500 feet above sea; some open land occurring in patches through timber; much good fir to 30 inches diameter; jack pine to 14 inches, scrub and some windfalls; fair grazing.

SEC. 31, W. $\frac{1}{2}$, SE. $\frac{1}{4}$.—Rolling, with parts broken, steep and rocky; fair portion workable; 3,875 to over 4,000 feet above sea; sandy loam of poor variety, stony; some meadow land of hay value; scattered fir to 30 inches, and much jack pine with some spruce and scrub; fair grazing.

SEC. 32, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Usually rolling workable slopes, parts broken and rocky, some meadow land; light loam, some black loam, stony; 3,920 to over 4,000 feet above sea; not of agricultural nature; jack pine to 14 inches and scrub with a few fir; fair grazing.

SEC. 32, N. $\frac{1}{2}$; SEC. 33 (FRAC.); SEC. 34.—Rolling slopes, parts steep and broken, too high for agricultural value, being nearly all over 4,000 feet in altitude, and reaching over 4,600 in sec. 34; scattered fir to 36 inches, with much jack pine to 10 and 12 inches, much scrub in parts; good grazing; likely timber value.

Tp. 18, R. 20, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

At present this township is included in the Long Lake forest reserve. The altitude is all over 4,000 feet, with the exception of part of the SW. $\frac{1}{4}$ of sec. 6. There is no land of agricultural value within the area. Two large lakes occupy a part of the eastern portion, namely Big Fish and Face lakes. The altitude of the former is 4,820 feet above sea level; some small open areas occur in vicinity of lakes and creeks.

SEC. 1, S. $\frac{1}{2}$; SEC. 2, S. $\frac{1}{2}$; SEC. 3, S. $\frac{1}{2}$, NW. $\frac{1}{4}$; SECS. 4, 5, 6, 7; SEC. 8, S. $\frac{1}{2}$; SEC. 9, S. $\frac{1}{4}$.—Rolling slopes broken and steep in parts, with some rocky outcrops; altitude 3,950 to 4,900 feet above sea; fir are quite frequent, averaging 24 inches, and reach 48 inches diameter, lumber value, much jack pine to 14 inches, spruce to 20 inches in damp parts, small poplar, willow and birch scattering throughout, very little windfall; good grazing.

SEC. 1, N. $\frac{1}{2}$; SEC. 2, N. $\frac{1}{2}$; SEC. 3, NE. $\frac{1}{4}$; SECS. 10, 11, 12.—A much broken area, parts rolling; very high, altitude runs to over 5,000 feet; some grass marshes; rocky ridges; dense growth of jack pine, with patches of windfalls and dead timber, occasional fir and some spruce, no merchantable timber; some poplar scrub and willows; pine grass gives poor to fair grazing.

SEC. 13; SEC. 14, SE. $\frac{1}{4}$ (FRAC.); SEC. 24 (FRAC. E. OF FISH LAKE).—Rising in broken hilly surface from Big Fish and Face lakes, toward Choo-whel mountain, 4,820 feet and upwards in altitude; thickly wooded with jack pine varying from small scrub to 15 inches diameter, much windfall and dead standing timber, small scrub in parts, quite a few spruce to 24 inches diameter bordering east side of Fish and Face lakes; some pine grass, but not a grazing area.

SEC. 8, N. $\frac{1}{2}$; SEC. 9, N. $\frac{3}{4}$; SEC. 14 (FRAC.) W. OF LAKE.); SECS. 15 TO 23; SECS. 25 TO 36.—A high, rolling and hilly country, rising from the valley of Greenstone creek, Big Fish and Face lakes and valley extending north; altitude rises to over 5,500 feet above sea; parts are badly broken; thick growth of jack pine from scrub size to 15 inches diameter, but usually smaller, much small poplar, willow and spruce of small dimension; some grass marshes, a fair amount of pine grass gives grazing value; evidence of old brûlé in many parts, timber is not of commercial value.

Tp. 19, R. 20, W. 6th Mer. *A. V. Chase, D.L.S., 1910.*

Only a small area of this township is below 4,000 feet above sea. Probably less than eight square miles are below that elevation. Of this area only a very small portion is workable land, namely, some small flats along Three-mile creek. Some lands in the northeast part of the township adjacent to and east of Duffy lake are of an elevation from 3,260 to 4,000 feet above sea, but these lands are nearly all hilly and summit lands unfit for cultivation. The larger portion of the township is composed of high rolling timbered lands, with considerable rocky country.

SECS. 1, 2, 3.—All over 4,000 feet above sea; mostly timbered lands covered with a thick growth of small jack pine to 15 inches diameter, some parts have been burnt over and are covered with small scrub, there is no timber value; poor to no grazing; land, hilly and rolling.

SECS. 4, 5.—All over 4,000 feet above sea; rolling, rocky, timbered land, covered with small jack pine to 12 inches diameter, some small spruce to 10 inches and a few patches of fir to 18 inches diameter to the west; poor to fair grazing.

SEC. 6.—All over 4,000 feet above sea; rolling, rocky land; some fir to 18 inches along the west boundary, remainder mostly jack pine to 15 inches diameter, with some scattered small fir and spruce; fair grazing.

SEC. 7.—From 4,080 to 4,870 feet above sea; steep slopes on rolling land; fir to 18 inches along west boundary, remainder small jack pine with considerable brush on east part; good grazing; no timber value.

SECS. 8, 9.—From 4,080 to 5,090 feet above sea very rough country, high and rolling timbered with small jack pine to 12 inches diameter; no timber of value; a great deal of small growth and brush; poor grazing.

SECS. 10, 11, 12.—From 4,550 to 5,400 feet and over above sea; high, rolling country, stony in parts, covered with thick growth of jack pine, which ranges as high as 15 inches diameter, not valuable as timber, a great deal of small brush; grazing is poor in this area.

SEC. 13.—Very high; green mountain; mostly bare rock.

SECS. 14, 15.—From 4,530 to 5,300 feet above sea; gently rolling land, very little value of any kind; timber is small jack pine, growing thickly in places, some to 12 inches diameter, a great deal of small growth and a few scattered large fir in the west part, no lumber value; grazing poor to fair.

SEC. 16.—From 4,250 to 5,010 feet above sea; high rolling land; some steep gullies with growth of small spruce, fair growth of fir to 18 inches diameter; some open land with good grazing in the south part.

SEC. 17.—From 3,920 to 4,510 feet above sea; W. $\frac{1}{2}$ is steep, rolling land of no agricultural value, all burnt over, only scrub growth; mostly open; good grazing; E. $\frac{1}{2}$ has fair value in fir to 20 inches, and some spruce, a fair amount of jack pine to 15 inches diameter in SE. $\frac{1}{4}$; good grazing.

SEC. 18.—From 3,370 to 4,290 feet above sea; almost all burned over; rocky and broken by gulches; no agricultural value; a good deal of small brush, but no timber value; fair grazing.

SEC. 19 (FRAC.).—From 3,000 to 4,150 feet above sea; small workable flat in undisposed of portion of NW. $\frac{1}{4}$; dark loam soil; more or less timbered, but only of value in the N. $\frac{1}{2}$, where fir to 24 inches diameter occur in fair quantity, S. $\frac{1}{2}$ is mostly old burn; very fair grazing.

SEC. 20.—From 3,770 to 4,380 feet above sea; no agricultural value; gently rolling land; the N. $\frac{1}{2}$ is covered with fir to 24 inches diameter in fair quantity, with a good deal of small jack pine, spruce and poplar; fair grazing; S. $\frac{1}{2}$ is mostly old burn; grazing fair as a rule; a good deal of small brush, cottonwoods, etc.

SEC. 21.—From 4,040 to 5,010 feet above sea; rolling land with steep slopes; W. $\frac{1}{2}$ has fair quantity of fir 18 to 24 inches diameter, with abundant timber grass for grazing; E. $\frac{1}{2}$ has thick growth of small poplar with some fir and spruce, fair timber value in south part in fir to 30 inches diameter; fair grazing.

SEC. 22.—From 4,250 to 5,010 feet above sea; steep, rolling and summit land; rather good value in fir to 24 inches diameter on heights running northeast and southwest through centre of section; to the northwest and southeast rather a thick growth of small fir, jack pine, and poplar with a few fir to 24 inches diameter; poor to fair grazing.

SEC. 23.—From 4,650 feet upwards in altitude; rolling land; timber value not marked; scattering fir only, with a good deal of small growth of all kinds, jackpine, poplar and spruce; rather poor grazing.

SEC. 24.—From 4,500 feet upwards above sea; some fir to 30 inches diameter in northwest part, doubtful lumber value; bald rock to southeast, with patches of fir and a few jack pine; poor grazing.

SECS. 25, 26, 27.—From 3,700 to 4,730 feet above sea; rolling country with steep slopes, no agricultural value; there are timber sections with a good general value in fir to 30 inches diameter, with some small spruce and jack pine; fair amount of timber grass throughout.

SEC. 28.—From 3,640 to 4,315 feet above sea; some workable alkaline flats in NE. $\frac{1}{4}$, not of value agriculturally owing to altitude; remainder is rolling, steep country with good timber value in E. $\frac{1}{2}$, fir to 30 inches diameter with some small jack pine and spruce, fair grazing; SE. $\frac{1}{4}$ has thick growth of poplar and some small spruce; good grazing.

SEC. 29.—From 3,500 to 4,315 feet above sea; steep and rolling, no farm value; a timber section; W. $\frac{1}{2}$ is mostly steep side hill with only fair value in fir, but this runs into good value in E. $\frac{1}{2}$; fair grazing as a rule.

SEC. 30 (FRAC.).—From 2,890 to 3,770 feet above sea; W. $\frac{1}{2}$ has small strip along Three-mile creek of workable land; black loam, sandy in places; remainder, steep hill with some fair fir and scattered bull pine; E. $\frac{1}{2}$ steep side hill with only scattered timber, bull pine to 20 inches diameter and scrub fir; fair grazing.

SEC. 31, E. $\frac{1}{2}$.—From 2,900 to 3,790 feet above sea; steep side hill of no agricul-

tural value; scattered bull pine to 24 inches diameter, and some scrub fir; fair grazing.

SEC. 32.—From 3,790 to 4,260 feet above sea; W. $\frac{1}{2}$ is steep side hill, no agricultural value; scattered fir and bull pine; fair grazing; E. $\frac{1}{2}$ has good timber value in fir to 30 inches diameter, with some scattered bull pine to 24 inches diameter and small spruce and jack pine; fair grazing.

SEC. 33.—From 3,640 to 4,260 feet above sea; rolling and steep, no agricultural value; a good timber section, fir to 30 inches diameter, some jack pine and spruce; abundance of pine grass.

SECS. 34, 35.—From 3,640 to 4,500 above sea; very steep, rolling country of no agricultural value, a few small flats; essentially timber country, good timber value in fir to 26 inches diameter, some small jack pine, spruce and cottonwood; fair grazing throughout.

SEC. 36.—From 3,025 to 4,000 feet above sea; high, rolling land; grazing fair but dried out at present; fair value in fir here, though of smaller size to 20 inches diameter.

Tp. 20, R. 20, W. 6th Mer. *A. V. Chase, D.L.S., 1910.*

This township is traversed in the western part from north to south by a range of rocky timbered hills, reaching an altitude of 4,550 feet above sea, sloping toward Three-mile Creek valley on the west and towards Duffy Creek valley and Kamloops lake on the east and northeast. The only areas showing value for agricultural purposes are a narrow strip along Three-mile creek and some land along Duffy creek at an altitude of from 2,200 to 2,700 feet above sea. These lands need water for agricultural value. A great deal of rolling, broken land is found throughout.

SEC. 1.—From 2,960 to 3,500 feet above sea; this section has some workable flats of small area, useless without water; in general a timber section with some good fir to 24 inches diameter and strong growth of young trees; grazing fair.

SEC. 2.—From 2,960 to 3,700 feet above sea; some workable sandy loam soil needing irrigation, in north part; a timber section, being covered with good fir to 36 inches diameter and a good deal of small timber of all kinds; fair grazing.

SEC. 3.—From 3,000 to 3,700 feet above sea; fairly flat in places in north part, with workable, light, sandy loam soil, workable areas are rather small, need water; fair growth of fir to 30 inches diameter, with small growth of all kinds in gulches; fair grazing.

SEC. 4.—From 3,450 to 4,290 feet above sea; rocky, rolling area with steep slopes, no agricultural value; a very good timber section in fir to 34 inches diameter and much young growth to 12 inches; grazing rather dried out.

SEC. 5.—Nearly all over 4,000 feet above sea; steep slopes of no agricultural value; fir to 30 inches diameter in fair quantity, with some spruce in valleys; abundance of timber grass.

SEC. 6, E. $\frac{1}{2}$.—From 2,910 to 4,050 feet above sea; very steep side hill covered with fir to 24 inches diameter, doubtful lumber value; fair grazing.

SEC. 7, N. $\frac{1}{2}$ SE. $\frac{1}{4}$.—From 2,450 to 3,800 feet above sea; NW. $\frac{1}{4}$ has sandy loam soil, with some stony gravel, possible farm value along creek flats, scattered bull pine and fir with underbrush; east $\frac{1}{2}$ is steep side hill covered with stunted fir to 24 inches diameter with some scattered bull pine; fair grazing as a whole.

SEC. 8.—From 3,400 to 4,060 feet above sea; steep and rolling, no agricultural value; timber is rather scarce in lumber size, but there is a quantity of small fir to 12 inches diameter; much cottonwood with spruce to 12 inches; fair grazing.

SEC. 9.—From 3,200 to 4,000 feet above sea; very broken and of no agricultural value; covered with fir to 24 inches diameter in fair quantity, scattered bull pine; fair grazing.

SEC. 10.—From 2,890 to 3,500 feet above sea; rolling, steep land, generally not workable, stony in places, with few small flats of light loam soil, useless without water; fair amount of fir to 20 inches diameter, with many small trees to 8 inches, scattered bull pine, small cottonwood, etc.; fair grazing.

SEC. 11.—From 2,130 to 3,000 feet above sea; north $\frac{1}{2}$ rather stony in parts and too steep for farm purposes to extreme west, with small amount of timber; poor grazing; workable slopes of light, sandy soil on the greater area in east part, dry and useless without water; rather fair growth of fir to 18 inches diameter in this part; south $\frac{1}{2}$ has fair growth of fir to 30 inches diameter on rolling land of doubtful agricultural value, precipitous in places; fair grazing.

SEC. 12.—From 2,100 to 3,000 feet above sea; NW. $\frac{1}{4}$ (undisposed of part) is stony and not workable; timber has been cut over, poor variety left, poor grazing; NE. $\frac{1}{4}$ has scattered bull pine and fir among small flats of workable alkaline soil of small value, fair grazing; south $\frac{1}{2}$ is not workable, steep stony slopes, with fair growth of fir to 30 inches diameter and scattered bull pine to 30 inches; fair grazing.

SEC. 13 (FRAC.).—(Undisposed of part) up to 2,100 feet above sea; no agricultural value; a few scattered fir; grazing fair in flats.

SEC. 14, N. $\frac{1}{2}$, SW. $\frac{1}{4}$ (UNDISPOSED OF PART).—From 1,900 to 2,890 feet above sea; very rolling and only workable in very small patches which are mostly alkaline; very steep in SW. $\frac{1}{4}$; rather open, no timber value, fair grazing in southwest part.

SEC. 15.—From 2,150 to 3,000 feet above sea; very rolling, with little workable land, which is in general stony, flats need water, of which there is no source; possible lumber value in fir to 20 inches diameter, with scattered bull pine to 24 inches; fair grazing in places.

SEC. 16.—From 2,610 to 3,500 feet above sea; very rolling and broken by small steep hills; fir to 20 inches diameter cover the slopes thickly, with some scattered bull pine; bald outcrops of rock in some places; fair grazing.

SEC. 17.—From 3,000 to 3,600 feet above sea; summit land, no agricultural value, precipitous and broken; fir from 20 to 30 inches diameter in fair quantity with occasional bull pine; fair grazing.

SEC. 18.—From 2,340 to 3,600 feet above sea; W. $\frac{1}{2}$ most of the land along creek bottom is workable, sandy loam soil, but patches of workable land are small; timber scattered fir and bull pine to 20 inches diameter, fair grazing; E. $\frac{1}{2}$ is composed of steep side hills and gullies, no agricultural value; a fair growth of fir to 30 inches diameter, with birch, poplar, and spruce small growth; fair grazing.

SEC. 19.—From 2,260 to 3,590 feet above sea; W. $\frac{1}{2}$ is composed of steep slopes, generally with rock outcrops; small flat of black loam soil in NW. $\frac{1}{4}$, needing water; is scattered fir and bull pine to 20 inches diameter; E. $\frac{1}{2}$ has steep slopes covered with fair quantity of fir to 18 inches diameter, but of doubtful lumber value as yet; poor grazing.

SEC. 20.—From 2,850 to 3,590 feet above sea; this section is steep, rocky and useless; poor grazing, and only scattered timber, fir to 18 inches diameter frequent in places.

SEC. 21.—From 2,080 to 2,850 feet above sea; W. $\frac{1}{2}$ is summit land, stony with some bare rock, steep slopes; fir and bull pine to 24 inches diameter of possible lumber value; rather fair grazing; E. $\frac{1}{2}$ has about 40 acres of workable alkaline flat in E. $\frac{1}{4}$, a trifle stony; some scattered bull pine and fir to 24 inches diameter; rather fair grazing.

SEC. 22.—From 1,810 to 2,680 feet above sea; NW. $\frac{1}{4}$, possibly 30 acres of this is workable, inclined to be alkaline, needs water; remainder stony and broken, few scattered fir and bull pine to 20 inches diameter; poor grazing; SW. $\frac{1}{4}$ is stony and broken; good quality of timber, fir and bull pine to 24 inches diameter, but in rather small quantity; grazing rather fair; NE. $\frac{1}{4}$ is very rocky and steep, no timber value, scattered fir and bull pine scrub; rather fair grazing; SE. $\frac{1}{4}$ has small workable patches, no farm value; doubtful timber value in fir and bull pine; fair grazing.

SEC. 23, 24, SW. $\frac{1}{4}$.—Very broken rock cliffs to 2,150 feet above sea, with few small alkaline flats; scattered small growth of fir and bull pine; poor grazing.

SEC. 27 (FRAC.).—From 1,660 to 2,080 feet above sea; southwest part (undisposed of) is rolling, stony, useless land; scattered bull pine and fir; poor grazing.

SECS. 28, 29.—From 1,530 to 2,500 feet above sea; all rough, rocky, and unworkable land except for a few alkaline flats; no agricultural land; timber well scattered, bull pine and fir to 24 inches diameter, of doubtful lumber value; poor grazing in general.

SEC. 30.—From 2,020 to 2,360 feet above sea; very rough and rocky, no agricultural value; very poor grazing; doubtful lumber value in scattering fir and bull pine to 20 inches diameter.

SEC. 31.—From 2,010 to 2,210 feet above sea; very rolling and stony with bare rock outcrops; few small workable patches of no value; scattered fir and bull pine to 20 inches diameter.

SEC. 32.—From 1,200 to 1,890 feet above sea; a rolling and rocky section of fir and bull pine to 20 inches diameter, well scattered; flats are alkaline and of small area; poor grazing.

SEC. 33 (FRAC.).—From level of Kamloops lake to 1,890 feet above sea; some workable, sandy loam soil, but much broken by cut banks and gullies; no agricultural value; poor grazing; practically no timber growth.

Tp. 21, R. 20, W. 6th Mer. *R. D. McCaw, D.L.S., 1909.*

SEC. 1, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$ (FRAC.), NW. $\frac{1}{4}$ (W. $\frac{1}{2}$).—Steep broken slopes falling to Kamloops lake, altitude rises to 940 feet above the lake; much rock and stone; no agricultural value; open land with a few scattering bull pine; fair grazing land.

NE. $\frac{1}{4}$, NW. $\frac{1}{4}$ (E. $\frac{1}{2}$).—Part gently rolling and part broken, 800 to 1,060 feet above Kamloops lake; clay loam with some stone, broken parts are rocky; open land with scattering bull pine to 24 inches diameter and a few fir; much of quarter is workable but very dry, irrigation is difficult to obtain; 40 per cent fruit land; broken parts have fair grazing value.

SEC. 2, SE. $\frac{1}{4}$ (FRAC.).—Steep, broken, rocky open slopes with small area of gently sloping land about 30 to 60 feet above Kamloops lake; gravelly clay, stony and some broken rock; 25 per cent fruit land, needing irrigation, which might be pumped from the lake.

NE. $\frac{1}{4}$.—Very broken slopes fall towards Kamloops lake; very rocky and stony and of no agricultural value; open, with a few scattering bull pine; scant grazing land.

FRACTION SOUTH OF KAMLOOPS LAKE.—*A. V. Chase, D.L.S., 1910.*

SEC. 5 (FRAC.).—From lake level to 2,250 feet above sea; small portions workable; sandy loam soil, needing irrigation; in the main rather broken and cut up; to the south it is broken and rocky; poor grazing, with scattered fir and bull pine to 20 inches diameter.

SEC. 6.—From 1,440 to 2,385 feet above sea; of no agricultural value; nearly all open; broken, rocky hills to the north, with a few scattered bull pine and fir to the south; poor grazing.

SECS. 7, 8 (FRAC.).—From lake level to 1,760 feet above sea; open, steep, precipitous slopes with some fair grazing.

R. D. McCaw, D.L.S., 1909.—SEC. 12, SE. $\frac{1}{4}$ (S. $\frac{1}{2}$), SW. $\frac{1}{4}$ (S. $\frac{1}{2}$).—Broken slopes rising in steep rocky slopes at north, very rocky and stony; no agricultural value; scattering fir and bull pine up to 24 inches diameter; fair grazing land

SEC. 18, NE. $\frac{1}{4}$ (FRAC.); SEC. 19, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Rough, and much broken land rising in sec. 18 from Kamloops lake to 1,200 feet above the lake in the NE. $\frac{1}{4}$

of sec 19; much rock in stony loam and sand; a few scattering bull pine trees, but generally open; fair grazing land.

SEC. 19, NW. $\frac{1}{4}$.—Generally broken land with small area of level land in NE. corner, 630 to 1,040 feet above Kamloops lake; clay and sandy loam soil, usually very stony and gravelly; much open with some scattered bull pine and fir; parts workable; 25 per cent fruit land; all fair grazing; irrigation will be difficult to be obtained. Copper creek flows south through the quarter.

SEC. 30, SW. $\frac{1}{4}$.—Level land along Copper creek with gentle slopes rising to the east; 900 to 1,070 feet above Kamloops lake; soil, dark sandy loam, stony in parts; fir and bull pine to 30 inches diameter; 50 per cent farm land; slopes need irrigation, which may be obtained in part from Copper creek.

SE $\frac{1}{4}$.—Rolling slopes, broken in part and rising steeply on the east side, 1,040 to 1,400 feet above Kamloops lake; sandy and clay loam, often stony and gravelly; fir and bull pine to 30 inches diameter, rather scattering and of possible value; NW. part 35 per cent farm land, needing irrigation which will be difficult to obtain; all is fair grazing land.

NE. $\frac{1}{4}$.—Gradual slope rising from the west into steep rocky slopes in the NE. part; altitude of gradual slope 1,070 to 1,210 feet above Kamloops lake; sandy and clay loam soil, often stony and gravelly; much open with scattering fir and bull pine; 40 per cent farm value, needing irrigation which will be difficult to obtain.

NW. $\frac{1}{4}$ (E. $\frac{1}{2}$).—Rolling slopes rising toward the east, 950 to 1,100 feet above Kamloops lake; soil, sandy and clay loam, stony and gravelly; a few fir and bull pine scattered over open land; much of land is workable but needs irrigation, which will be difficult to obtain; 25 per cent farm land.

Tp. 22, R. 20, W. 6th Mer. *R. D. McCaw, D.L.S., 1909.*

SEC. 1, NE. $\frac{1}{4}$.—North of Tranquille river the land falls to that river in workable slopes; to the south, steep rough slopes rise; 1,565 to 1,840 feet above Kamloops lake; soil a sandy loam with stone in places; scattering bull pine and fir to 24 inches diameter, with smaller jack pine and poplar; 35 per cent farm land; irrigation may be obtained from Tranquille river; the timber is of very fair quality and of probable lumber value.

NW. $\frac{1}{4}$.—Small area of workable slope in NE. corner along Tranquille river; steep slopes rise to the south of the river; altitude of workable land about 1,575 to 1,650 feet above Kamloops lake; soil, sandy loam, stony; fir and bull pine, scattering with small cottonwood, fir and willow, also some spruce; 35 per cent farm land; irrigation may be obtained from Tranquille river.

SEC. 6, NW. $\frac{1}{4}$; SEC. 7, SW. $\frac{1}{4}$.—Rolling land rising in steep slopes to SE.; over 2,000 feet above Kamloops lake; stony loam soil; much open land; some young poplar, fir, bull pine and jack pine; good grazing land.

SEC. 7, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$ (N. $\frac{1}{2}$); SEC. 8, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$; SEC. 9, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$; SEC. 16, SW. $\frac{1}{4}$ (S. $\frac{1}{2}$), SE. $\frac{1}{4}$ (S. $\frac{1}{2}$).—High rolling slopes over 2,000 feet above Kamloops lake; soil, sandy loam and usually stony; scattering fir and bull pine to 36 inches diameter with poplar and jack pine of smaller dimensions, thick scrub and windfalls in places, fair timber value; good grazing in places throughout.

SEC. 10, NW. $\frac{1}{4}$ (N. $\frac{1}{2}$), NE. $\frac{1}{4}$ (N. $\frac{1}{2}$); SEC. 15, SW. $\frac{1}{4}$ (S. $\frac{1}{2}$), SE. $\frac{1}{4}$ (S. $\frac{1}{2}$).—Steep broken slopes falling to Tranquille river, altitude 1,825 and upwards above Kamloops lake; scattering fir and bull pine to 36 inches diameter with small jack pine, poplar and birch, scrub and windfall in places, fair timber value, but difficult to get at; fair grazing land.

SEC. 11, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$ (N. $\frac{1}{2}$), NE. $\frac{1}{4}$ (S. $\frac{1}{2}$), SE. $\frac{1}{4}$ (N. $\frac{1}{2}$).—On each side of Tranquille river gentle slopes extend north and south to steep broken slopes; altitude of workable land 1,660 to 1,800 feet above Kamloops lake; soil sandy loam, stony in places; fir and bull pine to 24 inches diameter and young poplar, poor value as timber;

land has 40 per cent farm value, and may be irrigated from Tranquille river if necessary. Fred Davies and two brothers have made improvements on this section and reside on SE. $\frac{1}{4}$.

SEC. 12, SW. $\frac{1}{4}$.—Good workable slope to north of the Tranquille river, rising in steep rocky slopes in north part and also south of river; altitude of workable land 1,575 to 1,800 feet above Kamloops lake; sandy loam soil with stone in places; scattering fir, bull pine, jack pine and poplar, some large fir and bull pine of probable value for lumber but difficult to get out; 40 per cent farm land; irrigation may be obtained from Tranquille river. Fred Davis and two brothers have made clearings and other improvements here.

SE. $\frac{1}{4}$.—Small area of workable slope in SW. corner; steep slopes rise to the north; sandy loam soil, often stony; fir and bull pine of probable value for lumber but difficult to get out; 40 per cent farm land; irrigation may be obtained from Tranquille river.

Jos. E. Ross, D.L.S., 1910.—The land surveyed in this township lies in the valley of Tranquille river. In secs. 1 and 11 there is some good land along the river, and the settlers located there have already done considerable fencing and improvement work. The land lies at an elevation of about 2,600 feet above sea-level, the soil is a sandy loam covered with light cottonwood of which it can be easily cleared, and water for irrigation purposes is readily available. The good land of the Tranquille valley is well suited for general farming and stock-raising on a small scale. The climate is good but there is an occasional summer frost which has heretofore prevented the growing of potatoes. At present the land is accessible by a trail via Copper creek from Savona, sixteen miles distant. A good trail also runs from lac du Bois, from which there is a road to Kamloops, distant twenty-five miles from Tranquille valley. The lac du Bois road could be extended up the valley and, with the exception of two necessary rock cuts, would be easily constructed. Thence the road could be extended at reasonable cost along the present route of the Copper creek trail to Copper creek and from there to Kamloops lake. Along the trail to Copper creek there is a small meadow in the NE. $\frac{1}{4}$ of sec. 8. A small creek comes down a hill from the south and flows into the Tranquille. There are some deer and bears in this township, while the river is well stocked with trout. On the hillsides along the valley there is a fairly good growth of fir and pine.

Tp. 23, R. 20, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

Possibly 30 square miles of this township is above the 4,000 feet elevation and consequently unfit for agricultural use of any kind. It is in general very hilly and rolling and offers no flat land of low altitude except along Criss creek in the north. No timber value is met with except in the extreme south and southwestern parts where some good sized fir is seen. On account of the frequency and magnitude of the fires in this township much of the grazing is destroyed for the present but some scattered flats and sloughs in the interior still present summer feed for small amount of stock. The timber destroyed recently by fire is not of value the fires in general only destroying the small stuff and undergrowth.

SECS 1 AND 2.—Elevation, all over 4,000 feet above the sea; no agricultural value; rough, rocky and steep land covered with patches of small jack pine, with considerable area burned over, there are burned logs on the ground and grazing mostly destroyed.

SECS. 3 AND 4.—Elevation, from 3,580 to 4,000 feet and over, above the sea, and too high for agricultural value; deep gulches are found along Tranquille river and branches and prevent possibility of irrigating an area of possible agricultural value. No timber of value is seen in section 3 but a fair range of fir to 30 inches is found through sec. 4, particularly in the southern part. Sec. 3 is more or less covered with small jack pine to 10 inches and stretches of burn which has destroyed the grazing and underbrush and killed some of the timber.

SECS. W. $\frac{1}{2}$ 5 AND 6.—Elevation from 3,790 to 4,000 feet and over above the sea. Rising slowly to the north and northwest; of no agricultural value on account of stony ground. In the south part there is a fair amount of fir, but this runs into small jack pine and poplar as one goes north; very stony in the north part, which has been burned over recently; grazing is poor to scant in consequence.

SECS. E. $\frac{1}{2}$ 5 and E. $\frac{1}{2}$ 8.—Elevation, nearly all over 4,000 feet above the sea; a small portion at the south of sec. 5 is at about 3,800 feet; gradually rising to north; very stony and of no agricultural value. In sec. 5 is seen considerable good-sized fir, but this runs out toward the north and disappears altogether in sec. 8. The grazing is rather scant on account of many fires having destroyed most of it through this area.

SECS. 7 AND W. $\frac{1}{2}$ OF 8.—Elevation, from 3,800 to 4,000 feet and over above the sea; stony ground of no agricultural value covered with dense growth of small jack pine and poplar brush. Much has been burned over recently, destroying the grazing; some fair-sized fir are seen on the ridge in the W. $\frac{1}{2}$ of 7, but not in quantity to be of merchantable value.

SECS. 9 AND 10.—Elevation, all over 4,000 feet above the sea, except small area around Tranquille creek gulch; no agricultural value; country rolling and hilly and covered almost entirely with thick ranges of jack pine. A few fir to 30 inches in the south part, but not of merchantable quantity. Recent fires have destroyed most of the grazing.

SECS. 11 AND 12.—Elevation, all over 4,000 feet above the sea level; no agricultural value. Burnt over 1911. Some small jack pine and a few spruce. Burnt and fallen timber with a few fir of possible value to 24 inches; grazing mostly destroyed.

SECS. 18, NW. $\frac{1}{2}$ OF 17; SECS. 19 AND 20.—With the exception of a small portion of sec. 18, all this area is over 4,000 feet above the sea level. Rolling, stony ground classed as timbered land, but of no value of any kind except for small stretches of possibly fair grazing. All has been burned over at one time with the exception of a small ridge at the extreme west, where fir to 20 inches is still standing. Recent burn has destroyed most of the grazing. All this area is covered with dense growths of small jack pine with some areas of poplar brush.

SECS. 29 AND 30.—Elevation, nearly all over 4,000 feet above the sea level; rising toward the southeast. A sandy loam soil in parts, running into rolling steep country toward the southeast; no agricultural value; covered almost completely with jack pine thickets and stretches of recent burn. Very rocky in parts, with most of grazing destroyed by fire.

SEC. 31.—Elevation, from about 3,300 to 4,000 feet above the sea level. The NW. $\frac{1}{4}$ contains some irrigable flats of black loam which should be capable of growing hay. It is cut up by intervening ridges of jack pine with some scattered fir. There is good grazing in the vicinity of Criss creek, but only fair elsewhere. The NE. $\frac{1}{4}$ is of small value. No agricultural land to speak of; small jack pine; fair grazing. The S. $\frac{1}{2}$ is of little account, stony ground covered with stretches of small jack pine; considerable burn, with grazing destroyed.

SEC. 32.—Elevation, from 3,350 to 4,000 feet and over above the sea. The NW. $\frac{1}{4}$ is not of much account, stony ground and poor soil. Some grazing, but a good deal has been burned over. Small jack pine timber, no merchantable value. The S. $\frac{1}{2}$ is of no value; rough land running into rocky steeps. Some loam bottoms covered with small jack pine; considerable burn.

SEC. 33.—Elevation, from 3,500 to 4,000 feet and over, above the sea. Rather useless land. Some grazing near the creek, but no agricultural value. A great deal of burn, with some poplar scrub; a few scattered fir.

REMAINDER OF THE TOWNSHIP, NE. PART.—Elevation, all over 4,000 feet above the sea. A rolling country rising toward the northeast and covered mostly with stretches of small jack pine. Scattered fir is met with, but in no merchantable quantity. No agricultural value of any kind. Grazing is not of much value as this part has been recently burnt and most of the underbrush and green stuff burnt out.

Tp. 23 & 24, R. 20, W. 6th Mer. *Jos. E. Ross, D.L.S., 1910.*

The land surveyed in these townships lies along the valley of Criss creek at an elevation of 3,700 feet above sea-level. The only means of access at present is by a pack-trail from Savona, thirty miles distant. A good road could be built at low cost from the present road to upper Deadman river, which passes within six miles of the Criss creek meadows. These meadows lying along Criss creek and its small tributaries are mostly brushy with open glades on which the soil is of good quality. Apart from whatever value they would possess as hay meadows, the prevalence of summer frosts at this elevation would render these lands useless for agricultural purposes. On August 23, there was a snowstorm, and the nights during the latter part of that month were very frosty. On the hills surrounding the valley the soil is poor, being very sandy. The timber consists of jack pine with some fir and poplar. Criss creek is well stocked with small trout. Deer and coyotes are the most common animals in these townships. Along the creek is a colony of beaver.

Fractional Tp. 24, R. 20, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

Traversed in a north easterly direction by Criss creek and branches with land sloping up to the NW. and SE. This township holds some agricultural land along the creek, most of which, however, has been disposed of. There is some doubt as to the possibility of growing profitably anything but hay and some of the most hardy vegetables in this township on account of frost in the summer months. Settlers here report frost in July on the majority of the nights in that month, this (1911) season. There is little timber of any value and grazing is very fair in general.

SECS. 1, 2 AND 12.—All over 4,000 feet above the sea; no agricultural value of any kind; a rolling high country covered almost entirely with stretches of jack pine, interspersed with areas of open land; some scattering fir is seen but not in merchantable quantity; grazing in this area has been more or less destroyed by recent fire.

SEC. 3.—Elevation, from 3,690 to 4,000 feet and over, above the sea, too high for any agricultural purposes; grazing fair in parts. Mostly rolling land rising to the SE. and covered with stretches of jack pine with poplar brush, no timber value.

SEC. 4.—Elevation, from 3,600 to 4,000 feet and over, above the sea; NW. $\frac{1}{4}$ contains some fair grazing in its west part but the remainder of the land is rough stony and broken up, with poor growth of jack pine to 10 inches, of no value. SW. $\frac{1}{4}$ contains a little good grazing in NW. part but remainder is broken, stony ground of no value; some fir to 24 inches of no commercial value. SE. $\frac{1}{4}$ is of no account; usual growth of small jack pine and scattered fir; poor grazing.

SEC. 5.—Elevation, from 3,430 to 3,610 feet and over, above the sea; south half is of very doubtful agricultural value; there are a few meadows in the extreme east part though a trifle muskeggy at present; grazing has been badly burnt out in this area except in the eastern part; only scrub jack pine and a few fir; no merchantable timber of any kind.

SEC. 6.—Elevation, from 3,400 to 4,180 feet and over, above the sea. The west half rising gently toward the north; workable soil with fair meadow at south end, very doubtful agricultural value on account of altitude; no timber value but scattered large fir are met with among stretches of small jack pine; fair grazing. NE. $\frac{1}{4}$, steep side hill; no agricultural value; considerable fir to 12 inches with fair grazing.

SEC. 7.—Elevation, from 3,950 to 4,000 feet and over, above the sea; no agricultural value; a quantity of small fir 12 inches to 16 inches in the south part, probably suitable for small portable mill though not in great amount, running into small jack pine to north; fair grazing, pine grass.

SEC. 8.—Elevation, from 3,570 to 4,000 feet and over, above the sea; steep slope in general with some flatter land and muskeg swamp near creek with few spruce to 16 inches, range of fir to 20 inches but only suitable for small portable mill; no agricultural value; some fair grazing.

SEC. 9.—Elevation, from 3,660 to 3,770 feet and over above the sea. W. $\frac{1}{2}$, mostly spruce muskeg with trees to 16 inches; not merchantable value. More open near creek, with fair grazing, but land not flat enough for cultivation.

SEC. 10.—Elevation, from 3,570 to 4,000 feet and over above the sea. Undisposed of land in this section of no account, rising quickly to north and east. Mostly jack pine and scrub with pine grass.

SECS. 11, 12, 13 AND 14.—Elevation, all from 3,900 to 4,000 feet and over above the sea; essentially a rolling jack pine country, small timber of no merchantable value, with a few scattered fir; rather fair grazing of pine grass with some recent burn.

SEC. 15.—Elevation, from 3,600 to 3,900 feet and over above the sea. N. $\frac{1}{2}$ and SE. $\frac{1}{4}$ have few redeeming features; a rough area, stony, covered with small jack pine bush with muskeg in SE. $\frac{1}{2}$; some small areas fit for marsh hay. Fair grazing.

SEC. 16.—Elevation, from 3,570 to 4,000 feet and over above the sea. Rising steeply toward northwest of this section shows no agricultural value; country is more open near Criss creek, but toward northwest is covered with small jack pine which runs into a range of fir to 20 inches in northwest quarter. Grazing rather good near creek, but only fair throughout rest.

SECS. 17 AND 18.—Elevation, from about 15 acres below 4,000 feet elevation; rises steeply to northwest, with small range of fir in SW. part of sec. 17. The remainder is all small jack pine with pine grass.

Fractional Tp. 16, R. 21, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

Composed of secs. 18, 19, 30, 31 and 32 on the south limit of the Railway Belt. With the exception of a steep slope in northeast corner, the whole area is above 4,000 feet and much of it is over 4,500 feet above sea, so there is no farm land. Surface is generally rolling and timbered with jack pine and an occasional fir. Much windfall exists, with some scrub in parts. Rocky outcrops are common. Pine grass is fair in parts and affords some grazing of probable value.

Tp. 17, R. 21, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

This is a fractional township on the southerly limit of the Railway Belt, and is divided into an east and west slope by Guichon creek. A well graded road follows this creek connecting the township with Savona and Lower Nicola. The only settler cultivating land in this township is Archiel Chatrand, who owns Lot 780. The altitude of Mr. Chatrand's land varies from 3,400 to over 3,500 feet above sea. He depends on irrigation for his crops, and made the statement that crops would be an utter failure without irrigation. During the past season he could not get enough water from Guichon creek to irrigate his hay, with the result that the hay crop was poor. Oats and wheat often do not ripen, and potatoes will not mature.

SECS. 5, 6, 7, 8, 17, 18, 19, 20.—Comprise a high, rough, broken mass, all over 4,000 feet in altitude, with the exception of some steep sloping cañons; stony and rocky, with many steep slopes; entire area thickly timbered, mainly with jack pine, some trees reaching 15 inches diameter, but of a scrubby variety; windfalls thick; a few fir on lower slopes, to 24 inches diameter; dense growth usually. Some pine grass gives very poor grazing; windfalls make it difficult for stock to get through.

SECS. 29, 30, 31, 32.—A very much broken area, steep rock slopes in places; surface has many outcrops; altitude from 3,680 to over 4,000 feet; soil is a sandy loam, gravelly and stony, and of poor quality; useless for agriculture; Witches brook flows northerly through a deep ravine in secs. 30 and 31; jack pine to 15 inches and fir to 30 inches, with scrub, cover the surface, windfalls in parts; fir is rather scarce

in the west and north parts, but in sec. 29, W. $\frac{1}{2}$ 30, and S. $\frac{1}{2}$ 32 much good fir of merchantable value exists; grazing is poor to fair, and of some value to the stock man; SW. $\frac{1}{4}$ 30 has small area of grass marsh.

SEC. 28, W. $\frac{1}{2}$; SEC. 33; E. $\frac{1}{2}$ (FRAC.).—Rolling and broken slopes with some rock cliffs, 3,400 to over 4,000 feet above sea; no agricultural value; much good fir to 24 inches and some bull pine, jack pine, poplar and willows; usually fair pine grass grazing.

SEC. 23 (FRAC.); SEC. 24 (FRAC.); SECS. 25, 26.—High, rolling and broken country, of no use for farming, 3,630 to over 4,500 feet above sea; much open land with fir and bull pine in parts, also poplar and willow scrub; much rock; some of timber is good lumber quality, reaching 30 and 48 inches; E. $\frac{1}{2}$ of sec. 24 and SE. $\frac{1}{4}$ of 25 thickly timbered with fir to 30 inches, poplar, willow and some spruce; entire area affords fair grazing.

SEC. 27, E. $\frac{1}{2}$.—Rolling slopes broken in parts, 3,400 to 3,900 feet above sea; much open land; scattering bull pine to 36 inches, some fir; parts workable black loam, of very doubtful value, usually stony and gravelly; good grazing.

W. $\frac{1}{2}$ (FRAC.).—Rolling with parts level, sandy loam, gravelly and stony; small areas workable; 3,300 to 3,475 feet above sea; probable low farm value with irrigation; bull pine and jack pine scattering, rather poor timber; good grazing.

SEC. 28, E. $\frac{1}{2}$.—Much rolling workable slope becoming rough and broken to the west, 3,300 to about 3,500 feet above sea; brown and dark sandy loam, stony; jack pine to 12 inches with a few bull pine and fir to 24 inches, scrub and windfall; fair grazing.

SEC. 33, SE. $\frac{1}{4}$.—Gently rolling, parts rough, 3,300 to 3,500 feet above sea; stony, sandy loam, some dark loam; jack pine and poplar; some open land; a few bull pine to 24 inches, good grazing; needs irrigation.

SEC. 34, SW. $\frac{1}{4}$.—Some good flat in SW. corner, with slopes rolling and broken rising to NE, 3,300 to 3,680 above sea; dark and light sandy loam; fir and bull pine to 30 inches, some jack pine, timber is of probable lumber value; good grazing.

SEC. 34, NW. $\frac{1}{4}$, E. $\frac{1}{2}$; SEC. 35, W. $\frac{1}{2}$.—Rough, broken, stony slopes; 3,500 to 4,000 feet above sea; no farm land; outcrops in places; some open land; fir to 30 inches diameter and a few bull pine, possible timber value; good grazing; Meadow creek flows SW. through west $\frac{1}{2}$ sec. 35.

SEC. 35, E. $\frac{1}{2}$.—Much broken; Meadow creek flows west through NE. $\frac{1}{4}$; steep broken rocky slopes rise north and south; no agricultural land; parts open, thick jack pine, poplar and willows, fir and bull pine to 36 inches, some good timber; fair to good grazing.

SEC. 36, N. $\frac{1}{2}$.—South of Meadow creek rolling and broken, north of creek parts level; dry sandy loam with some marsh land in NE. $\frac{1}{4}$; 3,800 to 3,965 feet above sea; too high for farm value; NE. $\frac{1}{4}$ might be suitable for hay; much jack pine to 15 inches, some fir and bull pine to 48 inches, scrub and windfalls; fair to good grazing.

S. $\frac{1}{2}$.—Rolling slopes rising to south, parts steep and broken, 3,800 to 4,200 feet above sea; stony brown loam, some rock; patches of open land; a few scrubby fir to 20 inches, much jack pine with poplar and willow scrub, a few fir to 36 inches and some bull pine, timber of small value; good grazing.

Tp. 18, R. 21, W. 6th Mer. *A. V. Chase, D.L.S., 1910.*

Guichon creek flows southerly through the west half of this township, flanked on either side by high, rolling, and in some cases rocky country. No land of agricultural value occurs outside of this valley, and no successful cultivation of anything but hay was found in it, except near the south boundary where, at an altitude of from 3,400 to 3,500 feet, grain and vegetables were attempted by a settler, Archie Chatrand. It is often difficult to succeed in ripening these crops and potatoes will not succeed. A dry season also makes the hay crop very poor, through lack of sufficient water for irrigation, on which all the agriculture in this valley is dependent. There is considerable

timber value on the heights. A good road connecting Savona and Lower Nicola traverses the Guichon creek valley.

SECS. 1, 2.—From 3,700 to 4,250 feet above sea; possibly 45 per cent of south $\frac{1}{2}$ of sec. 1 is workable, but would not classify as farm land on account of altitude and nature of surface; rest is rolling, stony land; rather fair grazing; jack pine only on south halves, but running into fair timber value in fir to 30 inches diameter and scattered bull pine to NW.

SEC. 3.—From 3,540 to 3,930 feet above sea; rolling stony, useless land; poor grazing; scattered fir to 30 inches diameter, bull pine to 30 inches and a good deal of poplar brush, doubtful lumber value.

SEC. 4 (FRAC.).—From 3,450 to 3,700 feet above sea; undisposed of part similar to sec. 3, useless agriculturally; doubtful lumber value; poor grazing.

SEC. 5 (FRAC.).—From 3,460 to 4,000 feet above sea; no agricultural value; rolling and rocky; fair grazing; probable lumber value in fir to 30 inches diameter, and jack pine to 15 inches diameter.

SEC. 6.—From 3,680 to 4,250 feet above sea; rolling steep, rocky land of no agricultural value; grazing poor as a whole; probable lumber value in fir to 30 inches diameter, with a greater amount of jack pine to 12 inches diameter in east $\frac{1}{2}$.

SEC. 7.—From 3,720 to 4,230 feet above sea; very rocky and precipitous; no agricultural value; poor grazing; probable value in fir to 30 inches diameter.

SEC. 8 (FRAC.).—From 3,570 to 3,880 feet above sea; rolling and stony, no agricultural value; less timber value as one goes east, doubtful value, fir smaller; grazing fair.

SECS. 9 (FRAC.), 10.—From 3,600 to 4,300 feet above sea; rolling, precipitous country; no agricultural value; fair timber value in fir to 30 inches diameter in north halves, but running into scattered bull pine to 30 inches diameter in south halves; of doubtful value; poor grazing in general.

SECS. 11, 12, 13, 14.—With the exception of a small portion on the southwest corner, all over 4,000 feet and up to 4,975 feet above sea on east; no agricultural value; fair grazing usually; fair value in fir to 30 inches and scattered bull pine to 30 inches diameter in secs. 11 and 14, which thins out to doubtful value towards eastern boundary of township.

SEC. 15.—From 3,750 to 4,300 feet above sea; steep and rolling land; generally the E. $\frac{1}{2}$ shows good timber value in fir to 30 inches diameter, but W. $\frac{1}{2}$ is more open, and covered with scattered jack pine and some fir scrub; fair grazing.

SEC. 16.—Nearly all over 4,000 feet above sea; a good timber section, fir to 30 inches diameter, some scattered bull pine to 24 inches; fair grazing.

SEC. 17 (FRAC.).—From 3,570 to 4,000 feet above sea; undisposed of part is of little value except on extreme eastern part of section, where timber value is good; surface is rocky ground rolling and steep; timber mostly runs into jack pine to 10 inches diameter, and scattered bull pine to 24 inches diameter towards the west.

SEC. 18 (FRAC.).—From 3,600 to 4,200 feet above sea; undisposed of parts have no agricultural value; steep and rocky; value in fir in southerly part to 24 inches diameter; remainder holds small timber; fair grazing in S. $\frac{1}{2}$; remainder poor.

SEC. 19 (FRAC.).—From 3,630 to 4,015 feet above sea; poor timber here; more open country; rolling, no agricultural value; small jack pine, fir and brush; fair grazing.

SEC. 20 (FRAC.).—From 3,630 to 4,050 feet above sea; rough, rolling section, stony; only fair timber growth, mostly scattered bull pine to 24 inches diameter, with fir to 20 inches; fair grazing; a small area of rolling land is found along the boundary between the N. $\frac{1}{2}$ of sec. 19 and S. $\frac{1}{2}$ of sec. 20, this is workable soil but difficult to irrigate on account of its rolling nature.

SECS. 21 TO 24; SECS. 25 TO 28; SEC. 29, E. $\frac{1}{2}$; SECS. 32 TO 36.—These sections comprise an area nearly all over 3,900 feet, except on extreme west of the E. $\frac{1}{2}$ of sec. 29 and sec. 32. The land rises more or less steadily to the east, reaching an

altitude of 5,130 at northeast corner of township; no agricultural value in this area, which is all timbered land showing more or less lumber value over all its area; good fir to 30 inches and some bull pine to 30 inches diameter is found in the following sections:—Secs. 21, 22, S. $\frac{1}{2}$ of 27, 28, E. $\frac{1}{2}$ of 29, 32 and 33; a good deal of small jack pine is found all through, but is not of lumber value; secs. 23 and 24 have only fair value more open, fir to 20 inches diameter scattered with some small jack pine to 10 inches; on secs. 25 and 26 timber is more scattered; surface is rolling and rocky; N. $\frac{1}{2}$ of 27 and sec. 34 contain some open burnt stretches, grown up with small poplar, also some open flats with little timber except patches of scrub; sec. 35 has fair timber value in fir to 24 inches diameter, with scattered small jack pine; sec. 26 has fir rather smaller on average; there are no open lands of note in this territory, and with the exception of meadows and marshy flats along streams and some isolated open flats, the grazing is timber grass, of which there is generally abundance where the timber is of good size. A few open patches along boundary between secs. 33 and 34 give good grazing.

SEC. 29, W. $\frac{1}{2}$.—From 3,645 to 3,915 feet above sea; rough, rolling section; stony, with only fair timber value, mostly scattered bull pine to 24 inches diameter, with fir to 20 inches; some grazing.

SEC. 30, S. $\frac{1}{2}$, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$ (S. $\frac{1}{2}$); SEC. 31, W. $\frac{1}{2}$, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$ (N. $\frac{1}{2}$).—From 3,645 to 3,970 feet above sea; only workable land here is in NE. part of sec. 31; sandy loam soil, workable if cleared, but very dry and useless without irrigation: altitude makes it of very doubtful value; remainder mostly rocky country of no value except for small patches of 18-inch fir of doubtful utility, a great deal of small jack pine; a few flats of marsh in W. $\frac{1}{2}$ of 30 containing fair grazing; remainder has poor grazing.

Tp. 19, R. 21, W. 6th Mer. *A. V. Chase, D.L.S., 1910.*

No cultivated land is found within this township, and varied opinions are expressed as to the possibility of any of it being of agricultural value. A great deal of flat and rolling land is found in the vicinity of Tunkwa lake, having an elevation of from 3,835 to 3,900 feet. It is alkaline in that immediate neighbourhood and of black loam to the east and northeast. Only in the Three-mile creek valley near the eastern boundary of the township does the land become of low enough elevation to make agricultural value a probability, that is at an elevation of from 3,220 to 3,500 feet above sea level. Here sandy loam soil is prevalent. It might be possible to grow some kinds of hay in the vicinity of Tunkwa lake, but timothy hay has not been found growing successfully at this unprotected altitude. Considerable timber value is found in the north and southeast parts of the township in fir to 36 inches diameter, with the attendant growth of jack pine to 15 inches, scattered small spruce and poplar, etc. The land rises steadily from Tunkwa lake to the north and northwest, with summit about in secs. 31 and 32. A very good area of timber is found in the northern two tiers of sections. In the southeast part of the township the land rises in well timbered hills to over 4,500 feet on the east boundary. In the extreme west and southwest part of the township the land becomes rather rolling and stony with little timber value.

SEC. 1.—From 4,170 to 4,830 feet above sea; good fir up to 40 inches diameter, in quantity, scattering spruce and jack pine in small quantity and size; timber grass in fair quantity.

SEC. 2.—From 3,910 to 4,250 feet above sea; no agricultural value; covered in west $\frac{1}{2}$ with small jack pine brush and jack pine up to 18 inches diameter; some open places; running into fir to 30 inches diameter in east $\frac{1}{2}$, in fair quantity; grazing fair as a whole, timber grass.

SEC. 3.—From 3,840 to 3,960 feet above sea; mostly flat land of workable soil, no agricultural value because of lack of water and altitude; timbered land covered with

jack pine, small in north part and running to 18 inches diameter in south, no lumber value; some open stretches giving fair grazing, some pine grass in south part.

SEC. 4.—From 3,800 to 3,980 feet above sea; mostly workable soil, some stony, too high for agricultural value; south $\frac{1}{2}$ is timbered land covered with scattered jack pine to 15 inches and some fir to 30 inches diameter; some steep slopes, doubtful lumber value; timber grass, north $\frac{1}{2}$ is more open with fair grazing stretches; small jack pine to 6 inches diameter.

SEC. 5.—From 3,700 to 3,880 feet above sea; Guichon creek is 3,660 feet; stony land, very little worth as workable land, too high; north $\frac{1}{2}$ is rolling country covered with small jack pine to 15 inches diameter; no grazing of value; south $\frac{1}{2}$ has a few fir of fair size in jack pine, no lumber value; poor grazing in general.

SEC. 6.—From 3,750 to 3,960 feet above sea; some fair open grazing land in NE. $\frac{1}{4}$; some meadow land; probably 40 per cent of area is open land; alkaline soil, doubtful agricultural value, flats difficult to profitably irrigate; timber of no value, small jack pine and scattered fir; remainder of section of little value running into rolling, stony land; scattered timber with a few fir of fair size in SW. $\frac{1}{4}$; poor grazing in general.

SEC. 7.—From 3,745 to 3,920 feet above sea; very little workable land; some open spaces, 10 acres in extent, give good grazing in easterly and northeasterly part; stony ridges of no value; a great deal of small jack pine all over section, with a few scattered fir to 24 inches diameter in SW. $\frac{1}{4}$; poor grazing in south and west parts.

SEC. 8.—From 3,745 to 3,880 feet above sea; west $\frac{1}{2}$ is mostly covered with thick growth of small jack pine, no timber value; occasional small open stretches of good grazing land, poor grazing in timber; east $\frac{1}{2}$ has probably 60 per cent of area open grazing land; remainder covered with stretches of thickly growing small jack pine, no timber value; workable soil, alkaline, but of doubtful agricultural value owing to altitude.

SEC. 9, N. $\frac{1}{2}$ (FRAC.), S. $\frac{1}{2}$.—From 3,835 to 3,880 feet above sea; south $\frac{1}{2}$ is rolling country covered with stretches of thickly growing small jack pine; probably 60 per cent of area is open grazing land, in some places stony; no timber value; doubtful agricultural value; north $\frac{1}{2}$ is nearly all good open grazing land; some stretches of small jack pine of no timber value; rather alkaline soil, workable but difficult to irrigate owing to rolling nature.

SEC. 10.—From 3,840 to 3,970 feet above sea; west $\frac{1}{2}$ is fairly level land, good grazing, with scattered jack pine, mostly open; E. $\frac{1}{2}$ has rather more jack pine of larger size but doubtful lumber value; grazing fair; nearly all workable black loam soil in this section; altitude and lack of water give no agricultural value.

SEC. 11.—From 3,900 to 4,170 feet above sea; no agricultural value; W. $\frac{1}{2}$ is mostly open, rolling land covered with scattered clumps of jack pine and poplar; more open in north part, jack pine to 12 inches; grazing rather poor as a rule; E. $\frac{1}{2}$ has fair grazing on slopes, undergrowth in bottom; some scattered spruce running into thick fir to 20 inches diameter and jack pine to 10 inches.

SEC. 12.—From 4,100 to 4,660 feet above sea; no agricultural value; good quantity of fir in fair amount up to 30 inches diameter; timber grass; steep slopes; some underbrush.

SEC. 13.—Rather hilly and broken, some steep slopes, some good flats and slopes; 3,850 to over 4,000 feet above sea level, too high to be of more than possible value; sandy loam soil, some black loam; a good deal of scattering fir to 24 inches, some old *brulé*, scrub, some jack pine; fair to good grazing.

SEC. 14.—Rolling, with parts hilly and broken; some areas of open land; soil usually dark sandy loam, of good value; 3,750 to 4,080 feet above sea level; altitude and being unprotected makes it of very doubtful agricultural value; timber is mostly jack pine to 10 inches, with a few fir to 24 inches on parts; fair grazing.

SEC. 15.—Undulating country with much level land, 3,750 to 3,900 feet above sea level; black loam soil to 6 inches, usually of good value and much free from stone;

doubtful farm value; some open land, but generally wooded with jack pine to 10 inches diameter, an occasional bull pine and fir; fair grazing.

SEC. 16 (FRAC.).—From 3,835 to 3,885 feet above sea; open; fairly level land having good grazing; nearly all workable soil, doubtful agricultural value except possibly for wild hay.

SEC. 17.—From 3,835 to 3,940 feet above sea; E. $\frac{1}{2}$ is similar to sec. 16; open grazing land; few scattered jack pine in north part; workable soil; W. $\frac{1}{2}$ has thick growth of small jack pine with open stretches of fair grazing; fairly flat country.

SEC. 18.—From 3,835 to 4,000 feet above sea; black loam soil in general, some stones, workable; altitude is too great for agricultural value; E. $\frac{1}{2}$ is rolling land, open in places with fair grazing but with stretches of jack pine up to 15 inches diameter; W. $\frac{1}{2}$ has some scattered fir from 18 to 30 inches diameter appearing among small jack pine; fair grazing as a whole.

SEC. 19.—From 3,940 to 4,230 feet above sea; no agricultural value; abruptly rolling and stony in the northwest part, covered with thickly growing small jack pine and small poplars; scant grazing; a few open stretches in northeast part of fair grazing; to the southwest are found some fair-sized fir to 24 inches diameter, but these are absent among the small jack pine and spruce to the southeast; some open places of good grazing in southeast part.

SEC. 20.—From 3,885 to 4,230 feet above sea; workable in southeast part; too high for cultivation; probably 75 per cent of area is good open grazing land; fairly flat in places, remainder rolling; timbered parts to north and northeast covered with small jack pine in groves, with no timber value except in NE. $\frac{1}{4}$, where fir to 20 inches diameter becomes frequent, and some up to 30 inches diameter.

SEC. 21.—From 3,830 to 4,055 feet above sea; mostly open, rolling, grazing land in S. $\frac{1}{2}$, good grazing; a good deal of jack pine in clumps; workable in places, but too high for agricultural value; more thick jack pine growth in N. $\frac{1}{2}$; rather poor grazing; no timber value.

SEC. 22.—Gently rolling, much workable land, 3,700 to 3,950 feet above sea; sandy loam with a good deal of black loam throughout; doubtful farm value; some open land; timber is usually jack pine with an occasional fir and bull pine; fair grazing.

SEC. 23.—Rolling land, parts almost level, 3,390 to 3,950 feet above sea level; much black loam, generally of doubtful farm value; northeast $\frac{1}{4}$ has small area of land which is of likely value, but would need irrigation; some open areas; timber is jack pine, sometimes to 16 inches diameter, occasional fir and bull pine and some poplar scrub; fair grazing.

SEC. 24.—Rolling land, parts steep and broken; 3,390 to 3,910 feet above sea; parts open; some land of probable value in northwest corner; sandy loam with black loam in parts; jack pine and a few fir, with some scrub; good grazing.

SEC. 25, S. $\frac{1}{2}$.—Mostly workable flats and slopes, with parts hilly; sandy and clay loam with some black loam; needs irrigation; 3,220 to over 3,750 feet above sea level; should be fair farm land value; a good deal of jack pine with some fair fir and bull pine to 36 inches in parts, of possible value; fair grazing.

N. $\frac{1}{2}$.—Rolling slopes, parts hilly and broken; likely too high to be of value; 3,570 to over 4,000 feet in altitude; some good fir and a few bull pine, with jack pine, poor to fair timber; grazing usually fair.

SEC. 26, SE. $\frac{1}{4}$.—Slope rising to northwest; altitude 3,390 to 4,100 feet above sea; southeast corner of value with irrigation; sandy loam with a little black loam in parts; timber principally jack pine, some fir and bull pine, scrub; fair grazing.

SEC. 26, W. $\frac{1}{2}$, NE. $\frac{1}{4}$; SECS. 35, 36.—No farm land value; steep slope rises to west in section 36 and gradual slope to north in sec. 26; altitude 3,135 to much over 4,000 feet; growth is principally jack pine with some fir to 24 inches, scrub; grazing is fair.

SECS. 27 TO 30; SECS. 31 TO 34.—From 3,835 to 4,470 feet and higher above sea; these sections may be classified together on account of their similarity; the land rises

steadily to the north and northwest from south boundary of secs. 27 to 30, the summit being about the centre of secs. 31 and 32; the south $\frac{1}{2}$ of secs. 31 and 34 and all of secs. 27 to 29 and southeast part of sec. 30 have good value in fir to 36 inches diameter; there is a great deal of jack pine, poplar and spruce in gullies with other usual small growth; fair timber grass as a rule; the northwest part of sec. 30 and part of sec. 31 show a good deal of old burn, with jack pine and underbrush.

A. V. Chase, D.L.S., 1910.—In this township no cultivation of any kind has as yet been attempted and no concrete statement can be made as to agricultural possibilities there. In the immediate vicinity of Tunkwa lake and to the west of it are considerable flat and gently rolling lands of a sandy loam nature with considerable gravel in places. Alkaline soil is also met with here. The soil to the northeast of Tunkwa lake runs into good black loam a few inches in depth and is moist in places. Probably six square miles of this area is workable. However, since the soil is very dry generally and the rainfall in this region scant, it is very improbable that any cultivation could be carried on without abundant irrigation. Very low temperature at night occurs here as late as the latter end of June, several degrees of frost being experienced on each of sixteen nights in that month in this region and regions to the south. The elevation in general of this area is slightly higher than the elevation of Tunkwa lake which was found to be 3,835 feet above sea-level. A small portion of the northeast part of the township in the vicinity of Three-mile creek is of probable agricultural value, being at an elevation of from 3,220 to 3,500 feet above sea-level. It is of very dry sandy loam soil and could very likely be profitably irrigated from the waters of Three-mile creek and Tunkwa lake and adjoining lakes. The area is somewhat over half a section. The open, rolling and flat lands in this (Tunkwa lake) vicinity usually provide very good grazing. The remainder of this township shows no agricultural value but is well timbered, especially on the heights to the northwest and southeast, very good fir of merchantable value being found in these localities. Timber grass is found in quantity through the good timber. A good wagon road connecting Savona and Lower Nicola traverses most of range 21 under the area described. The extreme dryness of this district is shown by the fact that on only seven days during June and July was there any appreciable rain and on only five other days was the weather showery. After the month of June frost was not experienced, except at high altitudes unfit for cultivation until the month of September while the heat in the middle of the day was as a rule excessive.

Tp. 20, R. 21, W. 6th Mer. (Fraction south of the Thompson River.)
R. D. McCaw, D.L.S., 1910.

The greater part is taken up with rocky, broken hills and slopes with Savona mountain rising in the south half. However, there is much land of a workable nature which with irrigation would prove of value as farm land. At present all available water is recorded and the owners of lands, who hold these records state that during some seasons the supply is inadequate. It is quite evident that sufficient water cannot be obtained to irrigate the other lands, and value as farm land is very doubtful on this account. The soil is very dry and the rainfall small. Much of the soil is of an alkaline nature which further lessens the value.

SEC. 1.—2,740 to over 4,000 feet above sea; slopes rise to the west, becoming steep and broken in the west part; NE. $\frac{1}{4}$ is workable in parts but of no farm value owing to there being no available water for irrigation; fir with some bull pine and jack pine, poplar and willow scrub, possible value in timber; grazing fair.

SECS. 2, 3, 4, 5, 6, 9, 10, 11, 14, 15.—High mountainous country nearly all over 4,000 feet in altitude; parts rolling and broken; precipitous rock slopes in north and east; timber is chiefly jack pine with a few fir, some windfalls and scrub; pine grass grazing.

SEC. 7, SE. $\frac{1}{4}$; SEC. 8, S. $\frac{1}{2}$.—Some flat land with sandy loam soil, then rising in rather steep slopes to the south; 3,310 to over 4,000 feet above sea; no farm value without irrigation; fir, bull pine and scrub poplar and willows, timber is of fair value; fair grazing.

SEC. 7, W. $\frac{1}{2}$.—Rising to steep hill in southwest, 3,160 to over 4,000 feet above sea; parts broken and hilly; some fair land of farm value in NW. $\frac{1}{4}$; sandy loam, needs water, useless without; some good fir to 24 inches and larger, much scrub in parts; fair grazing.

SEC. 7, NE. $\frac{1}{4}$; SEC. 8, NW. $\frac{1}{4}$; SEC. 17, SW. $\frac{1}{4}$; SEC. 18, SE. $\frac{1}{4}$.—Much workable land on flats and slopes; parts steep, broken, and hilly; 2,825 to 3,460 feet above sea; of fair farm value if it could be irrigated; soil is sandy loam with some black loam; scattering fir to 24 inches, some larger, a few bull pine, much scrub poplar, large timber is of probable value; fair grazing.

SEC. 8, NE. $\frac{1}{4}$.—Hilly, with a few workable patches; no farm value; 3,185 to 3,400 feet above sea; some good fir to 24 inches, with a good deal of scrub of various kinds; fair grazing.

SEC. 12, W. $\frac{1}{2}$.—Much precipitous rock slope; some timber, but growth is mainly scrubby poplar, birch and willows; some grazing.

E. $\frac{1}{2}$.—Generally steep and broken; parts workable, but too small for value; 2,635 to 3,100 feet above sea; some good fir to 24 inches and larger, much scrub growth; fair grazing.

SEC. 13, E. $\frac{1}{2}$.—Rising bench land to broken hills, parts rolling; some good workable land of sandy loam, needs irrigation for farm value, no available source of water; some fir of poor value, much poplar and willow growth; grazing fair.

W. $\frac{1}{2}$.—Steep mountain slopes having no possible farm value; parts rocky; some good fir to 24 inches, much scrub growth of various kinds; fair grazing.

SEC. 16.—Generally broken and hilly, rising toward the southeast from a lake in northwest corner; 2,775 to over 4,000 feet above sea; some open patches; a good deal of fir to 24 inches diameter with a few bull pine, some young poplar and scrub; fair grazing.

SEC. 17, E. $\frac{1}{2}$.—Mostly broken and hilly; some parts workable; sandy loam; needs irrigation for farm value; 2,695 to nearly 4,000 feet above sea; fir and some bull pine to 24 inches, of probable lumber value, scrub poplar in parts, some open patches; fair grazing.

NW. $\frac{1}{4}$.—Much broken, no farm value, 2,695 to 2,975 feet above sea; some good fir, of possible lumber value, much small scrub; fair grazing.

SEC. 18, NE. $\frac{1}{4}$.—Much broken, 2,690 to 2,975 feet above sea; no farm value; parts open; a few fir and bull pine and some scrub; fair grazing.

SW. $\frac{1}{4}$.—Much good, workable land, 2,630 to 3,160 feet above sea; sandy loam, some black loam in parts; good value if water could be obtained; much open land; a good deal of fir of lumber value, much small growth; fair grazing.

NW. $\frac{1}{4}$.—Generally open and rolling; sandy loam, parts stony; 2,635 to 2,935 feet above sea; good farm value if sufficient water could be obtained; a few fir and bull pine to 18 inches diameter; fair grazing.

SEC. 19, SW. $\frac{1}{4}$.—Much rough and broken; parts level with good, rich sandy loam; 2,635 to 2,780 feet above sea; useless without irrigation; much open; some bull pine and fir to 20 inches diameter; fair grazing.

SEC. 19, SE. $\frac{1}{4}$; SEC. 20, SW. $\frac{1}{4}$ (FRAC.).—Generally rolling and broken, of no use except for timber and grazing; some bull pine and fir to 24 inches diameter scattering with scrub; altitude rises to 2,780 feet above sea.

SEC. 19, N. $\frac{1}{2}$; SEC. 20, NW. $\frac{1}{4}$ (FRAC.).—Rolling and broken, parts workable, useless without irrigation; stony and gravelly, often rocky; some scattering fir and bull pine, much open; little value except grazing.

SEC. 20, SE. $\frac{1}{4}$ (FRAC.).—Rolling land, 2,600 to 2,800 feet above sea; sandy loam; fair value if irrigation could be obtained; some fir and bull pine with scrub; parts open; fair grazing.

SEC. 21, W. $\frac{1}{2}$; NE. $\frac{1}{4}$.—Rolling valley with hills on each side, usually rocky; alkaline lake in northwest $\frac{1}{4}$; much workable land in valley, having dry loam, parts black and usually of alkaline character, poor farm value, and useless without irrigation; much open land with a few fir and bull pine and some scrub; fair grazing.

SE. $\frac{1}{4}$.—Steep and broken; some scrub and scattering fir and bull pine; fair grazing.

SEC. 22, NW. $\frac{1}{4}$.—Some open valley land; sandy loam; needs irrigation; much of area is broken and hilly; 2,355 to 3,000 feet above sea; very little timber, some scrub; fair grazing.

SEC. 22, S. $\frac{1}{2}$; SEC. 23, S. $\frac{1}{2}$.—Broken mountain side; much rock; 2,700 to over 4,000 feet above sea; some fair fir and bull pine to 24 inches diameter; fair grazing.

SEC. 22, NE. $\frac{1}{4}$; SEC. 23, N. $\frac{1}{2}$.—Broken, rocky hill sides; 2,355 to 3,200 feet above sea; much rock; fir and bull pine of poor quality with scrub; fair grazing.

SEC. 24, NW. $\frac{1}{4}$.—Some good bench land of sandy loam; rest steep broken and hilly; 2,200 to 3,125 feet above sea; would require irrigation for farm value; bull pine and fir to 24 inches of probable value, scrub; fair grazing.

SW. $\frac{1}{4}$.—Steep and broken; some good fir and bull pine; fair grazing.

E. $\frac{1}{2}$.—Three-mile creek flows northerly through; much workable land which could be irrigated from creek; sandy and light loam; rolling, with slopes becoming steep to east and west; 2,030 to about 2,700 feet above sea; much open land; some fir and bull pine to 24 inches, also some scrub; fair grazing.

SEC. 25, E. $\frac{1}{2}$ (FRAC.); SEC. 36, SE. $\frac{1}{4}$.—Rough, rocky, gravelly slopes, with general fall to the west; mostly open with some scattering fir and bull pine of poor value; poor to fair grazing.

SEC. 25, W. $\frac{1}{2}$ (FRAC.).—Rolling, broken slopes, with small areas workable; too small for value; 1,800 to 2,680 feet above sea; some scattering fir and bull pine, but generally open; fair grazing.

SEC. 26.—Broken, rocky hill with slopes falling on all sides; no farm value; 1,920 to 3,200 feet above sea; parts open; north $\frac{1}{2}$ has poor fir and bull pine of little value, south $\frac{1}{2}$ has possible timber value in fir and bull pine to 24 inches diameter; fair grazing.

SEC. 27, E. $\frac{1}{2}$.—Some valley land of dark loam soil inclined to be alkaline; rest is rolling and broken, with some steep hill side; 2,175 to 2,820 feet above sea; much open, with some fir and bull pine of little value; fair grazing.

SEC. 27, W. $\frac{1}{2}$; SEC. 28.—Rough hilly country, 2,255 to 2,775 feet above sea; much rock; no farm value; sandy loam, dry and gravelly; some open land; timber is fir and bull pine to 24 inches diameter, of poor to fair value, some scrub; fair grazing.

SECS. 29, 30; SEC. 31, S. $\frac{1}{2}$ (FRAC.); SEC. 32 (FRAC.); SEC. 33, W. $\frac{1}{2}$ (FRAC.), SE. $\frac{1}{4}$ (FRAC.).—Rough broken country with steep slopes near the Thompson river; much rock; useless for farm land; much open land; very little timber, scattering fir and bull pine of poor value; NE. $\frac{1}{4}$ of sec. 28 and south part of 33 have some fair timber; grazing is scant. The owner of lot 442 has cultivated a small area of alfalfa in southwest part of sec. 29 with irrigation from a small stream, area is 3 or 4 acres in extent.

SEC. 34, SW. $\frac{1}{4}$.—Broken and hilly; 1,870 to 2,400 feet above sea; no farm value, some good fir to 24 inches diameter, scrub; fair grazing.

NW. $\frac{1}{4}$ (FRAC.).—Rather steep slopes, of grazing value; parts could be cultivated but irrigation can not be obtained; dry sandy loam; very little timber.

NE. $\frac{1}{4}$.—A good deal of workable sandy loam, useless without water; 1,465 to 1,900 feet above sea; parts steep, broken and rocky; poor timber value; fair grazing.

SE. $\frac{1}{4}$.—Much workable land, useless without water; 1,870 to 2,300 feet above sea; parts broken and steep; some fir and bull pine of poor value; fair grazing.

SEC. 35, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$ (FRAC.).—Much broken and rocky; some small workable areas, useless without water; 1,400 to 1,890 feet above sea; much open land, with some fir and bull pine; fair grazing.

SW. $\frac{1}{4}$.—Much workable light loam, useless without water; parts hilly and broken; scattering timber, fir and bull pine of poor quality; fair grazing.

SEC. 36 NE. $\frac{1}{4}$.—Rocky hills, a little workable land between, of light loam soil, useless without water; some scattering fir and bull pine of poor value; fair grazing.

Tp. 21, R. 21, W. 6th Mer. (Fraction south of Kamloops Lake.) *R. D. McCaw, D.L.S., 1910.*

The undisposed-of lands are of little value except for grazing and the small amount of timber.

SEC. 1, SE. $\frac{1}{4}$.—Hilly open land of no agricultural value; 1,620 to 1,955 feet above sea; fair grazing; some scrubby fir and bull pine.

SEC. 1, N. $\frac{1}{2}$; SEC. 12, S. $\frac{1}{2}$ (FRAC.).—Steep, much broken and rocky, falling to Kamloops lake; little or no timber, mostly open; scant to fair grazing.

SEC. 2, SW. $\frac{1}{4}$ (FRAC.); SEC. 3, SE. $\frac{1}{4}$ (FRAC.).—Broken and rocky; a few bull pine and fir trees; poor grazing.

R. D. McCaw, D.L.S., 1909.—SEC. 4, NW. $\frac{1}{4}$ (FRAC.); SEC. 7, E. $\frac{1}{2}$ (FRAC.); SEC. 8 (WHOLE SEC.); SEC. 9 (FRAC.); SEC. 10 (FRAC.); SEC. 11, NW. $\frac{1}{4}$ (FRAC.); SEC. 13, W. $\frac{1}{2}$ (FRAC.); SEC. 14, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$, SW. $\frac{1}{4}$; SECS. 15, 16, 17; SEC. 18 (FRAC.); SEC. 19 (FRAC.); SECS. 20, 21, 22 (S. $\frac{1}{2}$); SECS. 23-26; SEC. 24 (FRAC.); SEC. 25 (FRAC.); SEC. 36 (FRAC.).—Generally very much broken; altitude rises from Kamloops lake to over 2,000 feet above it; land bordering the lake is very rocky and rises in steep, broken slopes in many places; through secs. 16, 17, 26 and 21 the land is more rolling, but very dry and worthless for agriculture without irrigation, which would be a most difficult thing to obtain; soil is generally a sandy loam, very stony, and many rock outcrops showing throughout; a great deal of open land exists throughout, especially in those parts bordering Kamloops lake in sections 9, 10, 13 and 14; timber grown on higher lands and consists of scrubby bull pine and fir to 24 inches diameter, and is very much scattered and of very doubtful value for anything but cord wood, fence rails, etc.; a rather scant grazing value exists throughout.

Tp. 22, R. 21, W. 6th Mer. *R. D. McCaw, D.L.S., 1909.*

SEC. 1, E. $\frac{1}{2}$ (FRAC.).—Steep, rocky slopes falling to west with small area of flat land bordering Copper creek in southwest corner; altitude rises from 1,020 feet on flat to about 2,000 feet on slopes, above Kamloops lake; soil in flat is gravelly loam and has fair value as farm land, but is of too small extent to be taken up; fir and bull pine on slopes, of poor quality generally; fair grazing land.

SEC. 11, NW. $\frac{1}{4}$.—Rolling slopes along Copper creek and rising in steep, rocky slopes on NE. and SW.; altitude, 1,480 feet and upwards above Kamloops lake; soil, black loam 3 inches, stony in parts with gravelly clay subsoil; fir and bull pine to 36 inches in valley bottom of fair quality; 35 per cent farm value along Copper creek, with fair grazing extending part way up slopes of hillside; irrigation from Copper creek.

SEC. 11, NE. $\frac{1}{4}$ (PART), SE. $\frac{1}{4}$ (NE. PART); SEC. 12, NE. $\frac{1}{4}$ (S. $\frac{1}{2}$), SE. $\frac{1}{4}$ (FRAC.).—Generally rolling, broken slopes of unworkable land; stony loam soil; scattering fir and bull pine to 20 inches, of small value; poor grazing land.

SEC. 12, NW. $\frac{1}{4}$ (S. $\frac{1}{2}$), SW. $\frac{1}{4}$ (N. $\frac{1}{2}$).—Small valley of workable land running northeast between steep slopes; gravelly loam soil; scattering scrubby fir and bull pine; fair grazing land; valley has farm value of about 50 per cent; irrigation is difficult to obtain.

SEC. 14, SW. $\frac{1}{4}$ (S. $\frac{1}{2}$).—Slopes rising from Copper creek in southwest corner; altitude 1,800 feet and upwards above Kamloops lake; soil, black loam 3 inches, gravelly clay subsoil; fir and bull pine to 36 inches in bottom of valley, of probable lumber value; all fair grazing, with 35 per cent farm land on lower slopes.

SEC. 15, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$, NW. $\frac{1}{4}$ (S. $\frac{1}{2}$); SEC. 16, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$, SE. $\frac{1}{4}$ (N. PART).—Copper creek flows southeasterly through these lands, and steep slopes rise on each side in close proximity to that creek; altitude all over 1,900 feet above Kamloops lake; very stony and rough; no farming value; fir and bull pine in parts to 36 inches diameter with some spruce and jackpine, probable timber value; fair grazing exists part way up the slopes.

SEC. 20, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$ (E. $\frac{1}{2}$), SE. $\frac{1}{4}$ (E. $\frac{1}{2}$); SEC. 21, NE. $\frac{1}{4}$ (W. $\frac{1}{2}$), SW. $\frac{1}{4}$ (SW. PART), SE. $\frac{1}{4}$ (L. S. 2).—Pass valley, which connects Copper creek valley and Criss creek valley, rolling slopes rise on each side; altitude over 2,000 feet above Kamloops lake; very stony loam; slopes are often steep and rocky; much open land exists throughout and a few alkaline ponds exist; the higher slopes are timbered with fir to 36 inches diameter with some bull pine, jackpine and spruce, fair timber value; all good grazing land.

SEC. 25, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$ (E. $\frac{1}{2}$), SW. $\frac{1}{4}$ (N. $\frac{1}{2}$); SEC. 26, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$ (N. $\frac{1}{2}$), NW. $\frac{1}{4}$.—Rather rough rolling land 2,000 to 2,500 feet above Kamloops lake; soil, stony loam; fir and some bull pine to 30 inches in places with smaller spruce and jackpine, probable timber value, though difficult to get to main waterway, much poplar and willow scrub; poor to fair grazing value.

SEC. 26, SW. $\frac{1}{4}$.—Small area of marshy bottom land along creek in NE. part, 1,950 feet above Kamloops lake; soil black muck; slopes rise to SW., fairly well timbered with fir and jack pine of merchantable value, but difficult to get out; bottom land, if drained, of 30 per cent farm value; a little grazing land in NE. part.

SEC. 27, SE. $\frac{1}{4}$ (N. $\frac{1}{2}$).—Slopes rising to south, timbered with fir and jackpine to 24 inches diameter, of fair value.

NE. $\frac{1}{4}$, NW. $\frac{1}{4}$.—Strip of rolling land along creek running through these quarters, with rough slopes to south; 1,900 to 2,300 feet above Kamloops lake; sandy loam soil, often stony; fir and bull pine to 36 inches, rather scattering but of probable value, with small poplar jack pine and spruce in places; 25 per cent farm land along creek; NE. corner of NE. $\frac{1}{4}$ is fair grazing land.

SEC. 28, NW. $\frac{1}{4}$.—Gradually sloping land in Northwest, and rising in steep slopes to south; 1,850 to over 2,000 feet above Kamloops lake; stony loam soil; lower land is open; one of the Red lakes encroaches in northeast corner; on slopes, fir, jack pine and some spruce grow, also a few bull pine, fair value as lumber; grazing occurs almost throughout; some land is 40 per cent farm land, needing irrigation, which may be obtained with difficulty from the largest lake.

NE. $\frac{1}{4}$.—In north part marshy land, grown over with grass, along lakes and creek; steep broken slopes to the south; 1,800 to over 2,000 feet above Kamloops lake; fir and jackpine on slopes, of fair value; soil is a sandy loam, and of about 30 per cent farm value in north part.

SEC. 28, SW. $\frac{1}{4}$ (W. $\frac{1}{2}$); SEC. 29, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$; SEC. 30, SW. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Rolling slopes over 2,000 feet above Kamloops lake; soil, a sandy and clay loam, often stony; open land occurs in places, but there is generally a scattering growth of fir and bull pine to 36 inches diameter with poplar, willow, scrub and windfalls occurring sometimes, also young jackpine and some spruce, much of timber is of probable value; fair grazing land.

SEC. 29, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$.—Rolling land from 1,730 to 2,000 feet above Kamloops lake; broken in places; sandy loam soil, often stony; scattering fir and bull pine to 36 inches diameter with some poplar and jackpine, probable timber value; large area of workable land of about 30 per cent farming value, irrigation could be obtained for parts from the Red lakes.

SEC. 30, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$.—Rolling slopes, broken in places with a general fall to Criss creek; 1,600 to 2,200 feet above Kamloops lake; sandy loam soil, often stony; scattering fir and bull pine to 24 inches diameter with some poplar and willow scrub occurring in places; land is generally rough but much is workable, 25 per cent farm value in north part; south part has fair grazing value.

SEC. 31, SW. $\frac{1}{4}$, SE. $\frac{1}{4}$, NE. $\frac{1}{4}$.—Criss creek flows in a southwesterly direction through the section, causing the SW. and NE. quarters to be broken and only the southeast parts workable rolling slopes; 1,400 to 1,730 feet above Kamloops lake; soil sandy loam, often stony; scattering bull pine and fir, also poplar and jackpine of small value; much of land is rough and irregular, but a good deal of it has about 35 per cent value as farm land, irrigation may be obtained from Criss creek, or from the Red lakes.

SEC. 32 (WHOLE SEC.).—Rolling slopes rough and broken in places and rising in steep slopes in NE. corner; 1,400 to 2,100 feet above Kamloops lake; soil sandy loam with black loam occurring in places, stony in places; scattering fir and bull pine to 30 inches of probable value, poplar and willow scrub in places; 25 to 50 per cent farm land; irrigation needed, but is difficult to obtain for higher lands; Criss creek is source for lower lands; NE. corner of NE. $\frac{1}{4}$ is of grazing value.

SEC. 33, SW. $\frac{1}{4}$.—Gradual slopes rising from south to steep slopes in north part; 1,800 to 2,200 feet above Kamloops lake; soil sandy loam with black loam in places, parts are very stony; fir and bull pine to 24 inches with much open land around lake in SE. corner; lower land 25 to 35 per cent farm value; irrigation needed, which may be obtained from the large Red lake; all has fair grazing value. John McClary is squatted on this quarter.

SEC. 33, SE. $\frac{1}{4}$; SEC. 34, SW. $\frac{1}{4}$.—South part has much hay land around lakes and creek and also workable slopes, north part is rather rough rolling slopes; 1,800 to 2,200 feet above Kamloops lake; soil stony, sandy loam with black loam in south part; scattering fir and bull pine to 24 inches of possible value, with poplar and jack pine in places; much open land in south part; S. $\frac{1}{2}$ is 35 per cent farm land, needing irrigation which may be obtained for part from the large Red lake; N. $\frac{1}{2}$ is fair grazing land. Frank Sparks is squatted on SW. $\frac{1}{4}$ of sec. 34.

SEC. 34, SE. $\frac{1}{4}$.—Rough rolling land broken in many parts; 1,900 to 2,200 feet above Kamloops lake; stony sandy loam soil; scattering bull pine and fir to 30 inches with a few to 48 inches, of probable lumber value, much scrub in places; fair grazing land; SW. corner has small area of 30 per cent farm land, which could be irrigated from the large Red lake.

SEC. 35, S. $\frac{1}{2}$; SEC. 36, SW. $\frac{1}{4}$, SE. $\frac{1}{4}$ (W. $\frac{1}{2}$).—Rough rolling land with some outcrops of rock, 2,000 to 2,400 feet above Kamloops lake; stony loam soil; fir and bull pine up to 36 inches also small jackpine, poplar and spruce, fair timber value; poor to fair grazing throughout.

Jos. E. Ross, D.L.S., 1910.—From Savona, twenty miles distant, this township is accessible by a good pack-trail. The land lies at an altitude of from 2,500 to 3,000 feet above sea-level but there is no indication of summer frosts. Copper creek valley is narrow but there are some open glades which would be valuable if the water necessary for irrigation were available. Besides the creek which is nearly dry there are several ponds but the water in them is saturated with alkali and unfit for any purpose. Around Red lake, in which the water is also bad, there are two small meadows but the land is otherwise of no use. Frog creek, a small stream flowing into Red lake, runs through several brushy meadows on which wild hay grows. The hills around these meadows are covered with open jackpine but are of no agricultural value. Throughout the township there is considerable pine and fir timber but it is nowhere dense. Westward from a small lake situated in the southwest quarter of section 34, the land is dry and useless without irrigation. With the exception of ducks we saw no game in this township.

Tp. 23, R. 21, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

This township is divided throughout by the valley of Criss creek and through a portion of the northwestern corner by Deadman Creek valley. Very little agricultural value is found on undisposed of lands in this township, the valleys being, almost without exception, deep gulches near the creeks with only a few small flats or benches extremely expensive to irrigate, and the higher lands steeply rolling and in such a position as to have no source of irrigation.

Some timber value is met with but fire has burned over a good deal of the eastern part of the township. Fair sized bull pine and fir are met with in the westerly and southwesterly parts but this runs into small jack pine as the land rises to the north, between Deadman river and Criss creek.

There is a very good area of grazing in this township particularly in the northwest quarter where considerable open land is found. Pine grass is found in abundance among the green timber.

SECS. 1 AND 2.—Elevation, from 3,600 to 4,000 feet and over, above the sea; rather flat with gentle rise to northeast; no agricultural or timber value; a light growth of poplar with scattered fir and jack pine; rather good grazing, bunch grass and pine grass.

SEC. 3.—Elevation, from 3,310 to 3,300 feet and over, above the sea; steeply rising in west part but more flat in east; no agricultural value, rocky soil, no irrigation possible. Considerable of this section burned over destroying grazing, except in south part. Considerable fir 16 inches to 18 inches with a few jack pine.

SEC. 4.—Elevation, from 2,400 to 3,400 feet and over above the sea; stony land, very rolling and steep and of no agricultural valley; creek valley a gulch; a good deal of bull pine to 20 inches in east part with some fair-sized fir; grazing fair.

SEC. 5.—Elevation, from 2,350 to 3,500 feet and over above the sea; steep and rocky slopes, no agricultural value; a growth of fir to 24 inches, rather scattered; grazing rather poor.

SEC. 6.—Elevation, from 2,800 to 3,800 feet and over above the sea; steep slopes covered more or less with fir to 24 inches and a few bull pine; timber rather scattered and grazing fair.

SEC. 7.—Elevation, to 4,000 feet and over above the sea; no value except for scattered bull pine and fir to 24 inches; grazing rather poor.

SEC. 8.—Elevation, from 3,000 to 3,800 feet and over above the sea; contains some easterly slopes open and farmable, but irrigation possible but doubtful; some fair grazing on these; remainder covered with fir up to 24 inches and some bull pine with cottonwood, alder, etc.; a spring of excellent water on NW. $\frac{1}{4}$.

SEC. 9.—Elevation, from 2,400 to 3,450 feet and over above the sea; is traversed by gulch of Criss creek, and consists almost entirely of steeply sloping hills with a few small, flat benches; considerable small fir with not much grazing; some trees to 24 inches.

SEC. 10.—Elevation, from 3,400 to 3,800 feet and over above the sea; steeply rolling land with considerable outcrop of solid rock showing; fair grazing in general; timber is hardly of lumber value, being small fir 12 inches to 16 inches, with scattered large trees.

SECS. 11, 12, 13 AND 14.—Elevation, from 3,750 to 4,000 feet and over above the sea. The south part of this is fairly flat, but becomes sloping to the west in the northwestern part and very irregular; no agricultural value; there is no timber value in the greater part of this area, particularly in the southeast part, but in sec. 14 some fairly good fir is met with, though not much above 16-inch size; timber is of jack pine and poplar, cottonwood, etc.; grazing is rather fair in general, pine grass.

SEC. 15.—Elevation, from 3,270 to 3,800 feet and over above the sea; fairly flat in east part but sloping rapidly to Criss creek in west; soil, light and rocky, showing no agricultural value; most value in west part, as east has been burned over, destroying grazing and timber; fir averaging 8 inches to 16 inches in west part.

SEC. 16.—Elevation from 2,600 to 3,540 feet and over, above sea; is traversed by gulch of Criss creek and consists almost entirely of steeply sloping lands of no agricultural value; considerable fair grazing of timber grass is herein; timber consists of a great deal of small fir with a few scattered large trees.

SEC. 17.—Elevation, from 3,000 to 4,000 feet and over, above the sea; steeply sloping in east part with few flats in west part but no agricultural value is apparent; timber consists of the usual growth for this altitude; fir to 24 inches with smaller growth; grazing fine grass.

SEC. 18.—Nearly all over 4,000 feet above the sea; is fairly flat with fair grazing but rising to south with fir to 24 inches; this timber has doubtful lumber value because of its position.

SEC. 19.—Elevation, from 3,500 to 4,000 feet and over, above the sea; is fairly flat except to the west where it commences descending steeply; there is some grazing but mostly pine grass; timber, of fir to 24 inches and jack pine 10 inches of little value except to settlers.

SEC. 20.—Elevation, from 3,200 to about 4,000 feet above the sea; this section except in its southeasterly part is fairly flat containing some fair grazing land; lack of water and high altitude make this valueless for agricultural purposes; timber of no value except to settlers, fir, etc., 24 inches.

SEC. 21.—Elevation, from 2,750 to 3,300 feet and over above the sea; traversed in SE. $\frac{1}{4}$ by Criss creek and in the SE. part is taken up mainly by a high outjutting hill with steep slopes to creek covered with scattering fir to 24 inches NE. $\frac{1}{4}$ rises gradually to the west and opens out into flats with good grazing land which lack of water prevents being of agricultural value; fir to 24 inches and jack pine to 10 inches in parts with clumps of poplar and cottonwood; west half is very rough with gulches and stony ground, having a better class of timber in general.

SEC. 22.—Elevation, from 2,760 to about 3,700 feet above the sea. Traversed by Criss creek and the country in general is rather steep and rolling; south of the creek is little value of any kind except the scattered fir to 28 inches with considerable small growth and timber grass; north of creek is somewhat more open with smaller class of timber but no agricultural value; mostly rough, stony land with only fair grazing.

SECS. 23 AND 24.—Elevations, from 2,900 to 4,000 and over, above the sea; rolling land covered mostly with jack pine and brush; no agricultural or timber value; some rather fair grazing.

SEC. 25.—Elevations, from 3,200 to 3,940 feet and over, above the sea; a rather useless section of no access; much small jack pine and brush, no timber value; fair grazing.

SEC. 26.—Elevation, from 2,900 to 3,500 feet and over, above the sea; is traversed by Criss creek and more or less cut up by gullies adjacent thereto, giving no agricultural value, some fair fir to 28 inches are found on north side of creek but south side is mostly jack pine with scattered fir; some recent fires herein, damage unknown; grazing fair, pine grass.

SEC. 27.—Elevation, from 2,850 to 3,600 feet and over, above the sea; this section is very rolling and in general timbered; it is rough, rocky land covered with ranges of fir running from 28 inches in northwest part to small stuff and jack pine in east, thick and underbrush in places makes grazing rather poor.

SEC. 28.—Elevation, from 3,230 to 3,600 feet and over, above the sea; northeast part is fairly well timbered and gives probable value in fir to 24 inches for portable mill; grazing fair among timber; southwest part is composed largely of open stretches of good grazing land with groves of poplar to 6 inches; land would be of agricultural value if irrigated.

SEC. 29.—Elevation, from 3,300 to 3,610 feet and over, above the sea; rolling country of no agricultural value; contains some stretches of fir to 24 inches of doubtful commercial value but a considerable area of fairly open grazing land with poplar scrub and underbrush.

SEC. 30.—Elevation, from 2,400 to 3,400 feet and over, above the sea; almost entirely very steep side hill in western part rising from Deadman river toward the southeast; presents no agricultural value; the eastern part is less steep but very rough and rocky; rather fair timber value in fir to 18 inches with majority small size; fair grazing throughout.

SEC. 31.—Elevation, from 2,400 to 3,200 feet and over, above the sea; traversed by deep valley and gulch of Deadman creek with precipitous slopes on both sides of creek and a good deal of bald rock on the west side; slopes on east side are covered with a fair amount of fir to 24 inches but on west side timber as not of much account; grazing similar.

SEC. 32.—Elevation, from 2,500 to 3,900 feet and over, above the sea; a steep section especially in the northwest part where the section rises from Deadman river through steep precipitous slopes; the southeast half is more flat and rolling; no agricultural value; rather good range of fir in southwest part running into small jack pine to northeast; fair grazing.

SEC. 33.—Elevation, from 3,630 to 4,000 feet and over, above the sea; a rolling section rising to the northeast; no agricultural value; timber is a fair range of fir to 20 inches in the southwest part, running into jack pine as one goes northeast; grazing fair in southwest part but rather poor in northeast part.

SEC. 34.—Elevation, from 3,500 to 4,000 feet and over, above the sea; rolling, steep and rocky; no agricultural value; timber shows rather good value in south part, fir 24 inches thinning out and getting smaller toward the north with small jack pine predominating; grazing throughout of pine grass.

SEC. 35.—Elevation, from 3,100 to 4,000 feet and over, above the sea; very precipitous near creek valley and covered with small timber of jack pine; toward the northwest more evenly sloping with fair range of fir 24 inches; no agricultural value; abundance of timber grass.

SEC. 36, SE. $\frac{1}{4}$.—Of little agricultural value except for a few small flats along creek; mostly steeply rolling, covered with fir to 24 inches which runs out into jack pine about the southeast corner of the section; grazing is poor.

Fractional Tp. 24, R. 21, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

No agricultural value is found herein. Land of altitude low enough for cultivation is almost without exception very precipitous, except in sec. 1 where slopes to Criss creek are more gradual. In this locality, however, frost is prevalent, even in summer months. Several nights of frost were reported by settlers in July. Some good fir is found east of Deadman river and a small area in the extreme southeast part of the township. This is also fair summer range except to the west of Deadman river.

SEC. 1.—Elevation, from 3,450 to 4,000 feet and over, above the sea; dark loam soil rising gently to the northwest but of very doubtful agricultural value, owing to frost and lack of water; becomes very steeply rolling in the northwest part; mostly poplar and cottonwood in the southeast part with scattered fir appearing about the centre of the section and becoming more frequent to the northwest; jack pine to 10 inches predominates in the northwestern part of the section; fair grazing throughout.

SECS. 2 AND 3.—Elevation, all over 4,000 feet above the sea; high land rising to the north; a few scattered fir to 24 inches, particularly in the south part but fir running out in general and giving place to jack pine; abundance of timber grass.

SECS. 4 AND 5.—Elevation, from 2,650 to 4,000 feet and over above the sea; traversed in sec. 5 by Deadman river and rising steeply therefrom to the west and through the east half south and all sec. 4 to the east; a small flat of workable land exists in the southwest corner of sec. 5, and would have to be cleared of a growth of small fir with occasional large trees; the remainder, the west half of 5 is exceedingly steep and useless except for growth of fir to 24 inches, running into jack pine in the higher slopes;

sec. 4 does not offer such value as timber is mostly jack pine, a few fir in the northwest corner; abundance of pine grass.

SEC. 6.—Elevation, from 2,700 to 3,700 feet and over above the sea; this land has no value except a fair growth of fir to 24 inches which stretches up to its west boundary; scant to no grazing and has been partly burnt over this year (1911).

SEC. 7.—Elevation, from 3,000 to 4,000 feet and over above the sea; very steep and rocky; very little grazing on account of the recent burn; good growth of small fir of no timber value.

SEC. 8.—Elevation, from 2,700 to 3,400 feet and over above the sea; contains a large lake surrounded by hills with steep slopes on the east side fairly bare on the west; a growth of small fir; very rocky; a good deal of burn in this locality on the side of the lake; fair grazing in places but a good deal of scant.

SEC. 9.—Elevation, from 3,000 to 4,000 feet and over above the sea; steeply rising to the east; no agricultural value; the northwest quarter contains a fair growth of fir to 24 inches with some jack pine to 10 inches, as one goes southeast the timber becomes mostly jack pine of no value; grazing scant.

SECS. SE. $\frac{1}{2}$ OF 10, 11, 12, 13, 14 AND SE. $\frac{3}{4}$ 15.—A plateau high and nearly all over 4,000 feet above the sea; covered almost entirely with a range of thickly growing jack pine to 10 inches intermingled with clumps of poplar to 8 inches; plateau is of no value except for grazing, abundance of pine grass where underbrush is not thick.

SEC. 16.—Elevation, from 3,000 to 4,000 feet and over above the sea; the west half is a sort of bench but the east half rises rapidly to the east; agricultural value very doubtful; part of the northwest quarter has been burned over and contains mostly dead jack pine, the remainder of the section is fairly well timbered with fir to 30 inches in the western part and running into jack pine toward the east.

SEC. 18.—Elevation, from 3,200 to 4,000 feet and over above the sea; rising steeply to the west of no agricultural value; a great deal of recent burn with damages unknown; good growth of small fir before fire.

Jos. E. Ross, D.L.S., 1910.—The land surveyed in this township lies mostly along the north limit of the railway belt on a rolling plateau between the valleys of Criss creek and Deadman river. It is mostly covered with a good growth of jack pine with numerous windfalls. There are a few small hay meadows in secs. 11 and 3. The valley of Deadman river is very rugged and rocky in this township and quite useless for farming. In the valley there is a good growth of fir on the hillsides. A wagon road from Savona to the upper Deadman river leaves the bottom of Deadman river valley near the mouth of Tobacco creek, ascending a very steep hill to the rolling plateau in this township. A trail follows up the valley, however, from Tobacco creek to Snahooshe or Deadman lake, a body of water nearly three miles in length, about a mile outside the belt. Deer and bears are quite numerous in Deadman valley.

Tp. 25, R. 21, W. 6th Mer. *W. J. Deans, D.L.S., 1910.*

The surface of the northeast and part of the northwest quarters of sec. 34 are steeply-sloping hillsides and benches, while the remainder of the section is in the flood lands of Columbia river. The soil of the uplands is clay and stones, covered with small jack pine, poplar and a few large fir. Columbia river, the Kootenay Central railway and a wagon road cross this section and also sec. 35. The surface of the southwest quarter of sec. 35, is for the most part steeply-sloping hillsides and in the southwest corner flood lands. The remainder of the section is a rolling bench somewhat rough towards the north and west. It is covered with fir, pine and birch, not very good for lumber but a large amount of it is very useful for building purposes. The whole of sec. 26, with the exception of about ten acres at the southwest corner, is flood lands of Columbia river, which flows from south to north through the centre of the section. The southwest quarter is a little more elevated than the rest of the section, and is drained by a small creek which runs in a northerly direction. It is

surveyed as timber berth No. 543. The timber on this quarter section is large pine, spruce and cedar. The soil is a heavy clay. The north half of sec. 25 is a rolling bench broken in some parts by ravines from forty to eighty feet in depth. It is covered with a growth of fir and jack pine of medium size. The south half is for the most part but little elevated above the flood level of Columbia river, and where it is not cultivated is thickly wooded with spruce, poplar and birch, and is drained by Washout creek. Sec. 36 is a high rolling bench sloping to the south and west, and except for part of the northwest quarter is covered with fir and spruce from twelve to eighteen inches in diameter. The southeast part of the section is in timber berth No. 421. The soil in this section is sand and clay, with patches of rock. There are two small creeks and several roads and trails made by the lumber men running through the section.

Tp. 26, R. 21, W. 6th Mer. *W. J. Deans, D.L.S., 1910.*

The southwest quarter of sec. 3 is sloping hillside and bench land, the southwest corner being mostly a marsh. The rest of the section is a rolling bench, and from this bench the land slopes steeply down to the flats of Columbia river. The soil is for the most part sandy clay and stones, drained by a creek of good water which crosses the section diagonally. The timber on this section is mostly jack pine and poplar brush, with some good fir lumber along the slopes of the river bank. The Kootenay Central railway and the Kootenay wagon road run through the southwest quarter. The south half of sec 2 is a rolling bench of clay land covered with poplar and jack pine brush and a few scattered jack pine and spruce of medium size. The north half is mostly a steep mountainside, legal subdivision 12 only being suitable for agriculture. The northwest quarter of sec. 4 is a steeply-sloping hillside to the northeast while the rest of the section is almost wholly in the flats of Columbia river, which, along with the Kootenay Central railway and a wagon road passes through the southeast, northeast and northwest quarters. The uplands are formed of a light clay soil somewhat stony and are covered with jack pine, poplar and birch bush and a few scattered large trees. There is a small stream of good water flowing through the northeast quarter. The northeast quarter and the eastern parts of the northwest and southeast quarters of sec. 5 are but slightly elevated above the level of the flood lands, and are for the most part covered with a heavy growth of cedar, spruce and pine. The eastern side of the section is marsh and hay lands while on the west there are steep hillsides and rolling benches cut by ravines. The soil on the lowlands is clay, very stony in some parts, while the soil on the uplands is sand or sandy clay and stones. There are two creeks crossing this section in an easterly direction. The uplands are poorly wooded with a growth of small jack pine and windfalls. The surface of sec. 9 is rolling benches and steep slopes of a light clay soil, and in the northeast quarter very stony. A part of the southwest quarter falls in the flat of Columbia river and is crossed by the Kootenay Central railway and a wagon road. The west half is covered with a thick growth of jack pine and fir from 4 to 10 inches in diameter, together with some large fir, while on the west the growth changes to jack pine and poplar brush. There is some good lumber and a large quantity of building timber on this section. The western half of sec. 16 is a rolling bench of clay somewhat stony, while the eastern half is steeply-sloping hillsides and ravines. Horse creek crosses this section from east to west, running through a deep ravine. The eastern half of the section is covered with jack pine and fir from 4 to 10 inches in diameter, while the western parts are covered with sparse jack pine and poplar bush. The eastern part of sec. 17 is a rolling bench sloping towards Columbia river on the west. Its soil is a light clay with stones and is covered for the most part with pine and poplar bush. The western part of this section is flooded land through which Columbia river flows from south to north. The northeast quarter of sec. 30 is a hillside broken with ravines sloping to the flooded lands of Columbia river, which take up the western half of the section. The uplands are covered with bush and scattered spruce and fir, and have a soil of sandy clay and

stones. The Kootenay Central railway and a wagon road run through the northeast quarter. The south half of the northeast quarter of sec. 1 slopes south and west. The north end is at the foot of a high rocky mountain. The soil is clay and sand with stones, and is covered with a thick growth of brush, with scattered fir and hemlock, 14 to 18 inches in diameter. The southeast quarter of sec. 10 is high bench land with a clay soil quite suitable for farming purposes. This quarter is covered with fir, spruce and cedar, chiefly along the ridge through the central portion. There is a small pond of good water near the southeast corner.

Tp. 14, R. 22, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

This is a fractional township on the south boundary of the railway belt and consists of nine sections. Steep and broken slopes prevail, with some high rolling land, admitting of no agricultural land except the part of sec. 6 already disposed of. Indian Reserve No. 9 makes fractional secs. 18, 19 and 30.

SEC. 6 (FRAC.); SEC. 7; SEC. 18 (FRAC.).—Rising steeply from the Nicola River valley, becomes broken and less steep in sec. 7, and rises to over 4,000 feet in sec. 18; some areas are workable but the impossibility of obtaining irrigation makes them useless for agriculture; generally a fair growth of fir and bull pine to 30 inches diameter, some larger, scrub in parts, lower slopes in sec. 6 have very little timber, jack pine becomes thick in north part of sec. 18.

SEC. 19 (FRAC.); SECS. 20, 29; SEC. 30 (FRAC.).—Rocky, hilly, mass rising to over 5,000 feet; parts are rolling; dense growth of jack pine (usually scrubby) to 12 inches diameter, much windfall, west $\frac{1}{2}$ of secs. 19 and 30 have some scattering fir and bull pine of fair quality, spruce in places and occasional fir over the remainder, some *brulé* in east part and open land in east $\frac{1}{2}$ of sec. 20; fair pine grass grazing.

SECS. 31, 32.—Nearly all over 4,000 feet above sea; rolling land; thick jack pine and much windfall, a few fir and bull pine to 24 inches in south part of sec. 31, scrub poplar and willows in parts; grazing is poor to fair.

Tp. 15, R. 22, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

There is no land of agricultural value in this township, except a narrow strip along the west side of sec. 6, which is of too small value for use. The west parts of secs. 6, 17 and 18 are below 4,000 feet, also the northwest part of sec. 31, but the steep slopes and altitude do not admit of agricultural value.

SECS. 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 22.—Very hilly, forming a part of the Promontory hills and rising much above 4,000 feet in altitude; many rocky knolls; dense growth of jack pine reaching 12 inches diameter in some cases, windfalls frequent and dense, a few fir in parts; grazing usually poor; secs. 10, 15, and 22 are very much broken and rocky; secs. 6, 7, and 18 have a good deal of fir and bull pine to 24 inches on lower slopes and likely value; scant poplar and willow in parts throughout.

SEC. 28, 29, 30, 31, 32, 33.—A rolling area with parts steep, rocky and broken, rising much above 4,000 feet in altitude; some muskegs and marshes scattered throughout; thick jack pine usually covers the area, with a few scattering fir, gradually becoming more numerous in secs. 30 and 31; sec. 31 has some good fir to 48 inches, with a few bull pine to 36 inches, and is of lumber value; some spruce in parts also scrub poplar and willow; rather poor growth of pine grass.

SECS. 26, 27, 35, 36, 34.—High rolling and becoming much broken and rocky to the east, too high and broken for utility; thick jack pine covers the area, with much windfall and considerable poplar and willow scrub in places, a few spruce; poor to fair grazing; some hay land exists in west $\frac{1}{2}$ of sec. 34 and marsh around lakes gives wild hay value.

Tp. 16, R. 22, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

The altitude is nearly all over 4,000 feet, with the exception of a strip of land rolling valley with much marsh land. The lowest point in the township is at the east boundary at the intersection of Witches brook. The altitude here is a little over 3,700 feet above sea. The entire township is too high for profitable farming. The lands dis-streams run south and are tributary to Skuhun creek.

SEC. 1, NE. $\frac{1}{4}$.—Steep rocky slopes, deep ravine; 3,875 to 4,500 feet above sea; much small jack pine and windfall, a few fir to 24 inches in north part; poor grazing.

SEC. 2, W. $\frac{1}{2}$, SE. $\frac{1}{4}$; SEC. 1, S. $\frac{1}{2}$.—Rolling slopes, broken in parts; much over 4,000 feet, parts to 4,500; thick growth of small jack pine with windfalls; some fair grazing.

SECS. 9, 10, 11 AND 12, S. $\frac{1}{2}$'s; SEC. 2, NE. $\frac{1}{4}$; SEC. 1, NW. $\frac{1}{4}$.—Rough broken slopes and hilly; very sandy, no agricultural value; all over 4,000 feet in altitude; much jack pine and windfall; south $\frac{1}{2}$ of sec. 12 is much broken and rocky and has a fair amount of fir to 24 inches; northeast $\frac{1}{4}$ of sec. 2 has some good soil south of lake, but is too high for value; grazing is poor.

SECS. 7, 8, S. $\frac{1}{2}$'s.—Steep slopes rising to north; 3,725 to over 4,000 feet; some fair fir and bull pine to 36 inches diameter, of likely lumber value; jack pine and scrub; poor to fair grazing.

SECS. 3, 4, 5, 6.—Along valley of Skuhun creek, a small strip of fairly level land extends along north side of creek through the north halves of these sections; soil is sandy loam, sometimes clay loam and then again almost pure sand, width is not over 10 chains, seems very porous and much stone is in evidence; 3,240 to 3,800 feet in altitude, and of extremely doubtful utility, steep slopes rise north and south to over 4,000 feet; jack pine is predominant, with willows and windfall, some scattering fir and bull pine to 36 inches on higher slopes; poor to fair grazing.

SECS. 7, 8, 9, 10, 11 AND 12 (N. $\frac{1}{2}$'s); SEC. 13 TO 36.—Generally a rolling country becoming hilly to the north; rock ridges on either side of a depression extending north through centre; very rocky; well watered with some small lakes and streams; altitude 4,000 to over 5,000 feet above sea; much old brulé which is covered with windfalls and standing dead timber, scrubby jack pine with isolated patches of trees to 10 inches covers the greater part, a few areas devoid of growth through secs. 8 and 17, in central part clumps of spruce to 18 inches diameter exist in damp portions, poplar and willow scrub scattered throughout; there is so little grass that grazing has practically no value.

Tp. 17, R. 22, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

Witches brook flows easterly through the north part of the township, through a rolling valley with much marsh land. The lowest point in the township is at the east boundary at the intersection of Witches brook. The altitude here is a little over 3,700 feet above sea. The entire township is too high for profitable farming. The lands disposed of through the valley of Witches brook are taken up solely for the grass in the marshes. On the Indian reserves the Indians cut this for hay or use it for pasturing stock in the summer. Some large marshes exist, but these are almost entirely upon the lands disposed of.

SECS. 1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23 (FRAC.), 24 (FRAC.).—Land rises in steep slopes from the valley of Witches brook and soon attains a high altitude; many rock outcrops occur and the entire surface is stony; the higher altitudes assume a rolling plateau, with a general rise towards Gnawed mountain in the southwest part of the township; a number of muskegs occur and form reservoirs for small streams which flow out of them to the north and east; the entire area is densely wooded with jack pine usually small, but in some instances running to 15 inches diameter; a few spruce exist around muskegs, and fir are found scattering through secs. 21, 22 and 23, the slopes rising south directly from Witches brook have a dense undergrowth of

alder, poplar and willows, thick windfalls exist throughout, and in parts form an almost impenetrable tangle, timber is not of lumber value, evidences of old burn are found throughout; grass is very scarce and is in insufficient quantity for grazing value.

SECS. 5, 6, 7, 8, 17, 18, 19, 20, 29 S. $\frac{1}{2}$; SEC. 30.—All above 4,000 feet, with the exception of a small part of sec. 30 and of north $\frac{1}{2}$ of sec. 29; no agricultural value; slopes rise to the southeast to Gnawed mountain; much of area is rough and broken, with a great deal of rock; jack pine covers the entire surface with the exception of a few rocky brulé areas, a few spruce are interspersed in damp portions and scattering fir along lower slopes in secs. 29 and 30, evidence of old burn in parts, timber is not of merchantable value, the fir not growing in sufficient number, windfalls usually thick; pine grass grows in rather poor quantity and affords poor grazing.

SEC. 25, SE. $\frac{1}{4}$.—Contains much grass marsh containing growth suitable for hay; slopes are workable on each side, but of no farm value; 3,700 to about 3,900 feet above sea; small jack pine and mixed scrub; poor grazing on slopes.

N. $\frac{1}{2}$, SW. $\frac{1}{4}$ (FRAC.).—Rolling slopes of a dry clay and sandy loam, very stony; 3,750 to over 4,000 feet above sea; jack pine to 15 inches and a few fir to the north, of probable value as timber; pine grass affords poor grazing; windfalls in places.

SEC. 26 (FRAC.).—Rolling slopes becoming steep at north; clay and sandy loam, dry and stony, some large boulders; small area of grass marsh in southwest $\frac{1}{4}$; 3,750 to over 4,000 feet above sea; jack pine to 12 inches, with some fir in north part to 36 inches, brulé in parts; rather poor grazing; windfalls in places.

SEC. 27, E. $\frac{1}{2}$ (FRAC.).—Witches brook flows east through north part of southeast $\frac{1}{4}$; rough, rolling slopes rise both north and south from muskeg along creek, becoming steep and rocky to the north; 3,800 to over 4,000 feet above sea; soil is a dry sandy loam stony; jack pine to 16 inches with some fir and bull pine to north; poor grazing.

SEC. 27, SW. $\frac{1}{4}$ (FRAC.); SEC. 28, SE. $\frac{1}{4}$ (FRAC.), SW. $\frac{1}{4}$.—Rolling slopes, parts steep; some level land, 3,825 to over 4,000 feet above sea; not farm land; jack pine and scrub, some windfalls; poor grazing.

SECS. 28 N. $\frac{1}{2}$ (FRAC.); SEC. 29, NE. $\frac{1}{4}$.—Swampy grass marsh along Witches brook which flows easterly; rolling slopes on each side of dry loam, stony in parts; 3,825 to over 4,000 feet above sea; jack pine to 10 inches, much scrub and windfall, willow scrub in swamp; fair grazing.

SEC. 29 NW. $\frac{1}{4}$.—Northeast part is level; rest is steep and broken slope rising to the south; 3,850 to over 4,000 feet above sea; light sandy loam soil of little value, very stony; much jack pine with some fir and bull pine to 30 inches, some small poplar; fair grazing.

SEC. 31 (FRAC.).—Generally broken and hilly with a very sandy surface; slopes rise north and south from Witches brook and lake; parts level; soil is very poor, stony; 3,880 to over 4,000 feet above sea; thick jack pine and a few bull pine; poor to fair grazing.

SEC. 32, N. $\frac{1}{2}$.—Rolling slopes rising to north becoming steep and rocky; light sandy loam, very stony; 3,900 to much over 4,000 feet above sea; small jack pine and poplar with scattered fir and bull pine to 30 inches diameter; usually fair grazing.

SEC. 33, W. $\frac{1}{2}$.—Steep and rocky at north, falling into rolling slopes at south; light loam, very stony; 3,885 to much over 4,000 feet in altitude; jack pine and poplar with a few fir; fair grazing.

SEC. 33, E. $\frac{1}{2}$; SECS. 34, 35, 36.—High rolling slopes often steep and rocky; all over 4,000 feet except a portion of southeast $\frac{1}{4}$ of sec. 33; stony sandy loam; growth is chiefly small jack pine, some to 15 inches, much scrub and windfall, scattering fir to 36 inches, parts have timber value; poor to fair pine grass grazing.

Tp. 18, R. 22, W. 6th Mer. A. V. Chase, D.L.S., 1910.

With the exception of such value as is found in sections along the east boundary of this township, there appears to be no commercial value therein. It is composed almost entirely of mountainous rock hills, all over 4,000 feet above sea, with the excep-

tion of $1\frac{1}{2}$ square miles in northeast corner, and a great deal over 5,000 feet above sea. No agricultural value of any kind appear, a meadow of wild hay in section 36 being the only value outside of the timber. No ranges of timber of commercial value were found except as mentioned in the description of the eastern tier of sections.

SECS. 1, 12, 13.—All over 4,000 feet above sea; no value except on scattered ridges of fir, which has possible value; almost no grazing; remainder all dense forests of small jack pine.

SEC. 24.—Nearly all over 4,000 feet above sea; no agricultural value; poor grazing; a few good fir to 24 inches diameter in east $\frac{1}{2}$, possibly 100 acres of possible lumber value, otherwise all small jack pine to 10 inches.

SEC. 25.—From 3,890 to 4,250 feet above sea; no agricultural value; rolling, stony ground; scant grazing; almost all a forest of small jack pine to 10 inches, with a few good fir to 20 inches diameter in southeast corner.

SEC. 35.—All over 4,000 feet above sea, except an area of 20 acres in northeast corner which is over 3,900 feet; a few scattered fir in east $\frac{1}{2}$ to 24 inches diameter; poor grazing; no other value; dense forests of small jack pine to 10 inches diameter.

SEC. 36.—From 3,750 to 4,135 feet above sea; west $\frac{1}{2}$ contains a good hay meadow, possibly 60 acres fit for wild hay only; remainder of section composed of rocky and rolling land covered with small timber, jack pine to 10 inches diameter, and some poplar brush, a great deal has been burned over at one time.

The remainder of the township may be described as a useless range of rocky hills covered more or less with a dense growth of jack pine to 10 inches diameter. Some isolated bottoms afford fair grazing.

Tp. 19, R. 22, W. 6th Mer. *A. V. Chase, D.L.S., 1910.*

This township is traversed from the northwest corner towards the southeast by the valley of Barnes and Guichon creeks. From this the land rises to Forge mountain at an elevation of over 5,000 feet above sea, on the southwest and to the divide between this and the Thompson River valley, to the northeast. Only a very small area, possibly two square miles on the southeast is below 4,000 feet in altitude, and the rolling nature of the country puts agriculture out of the question.

SEC. 1.—Rocky rolling country, 3,770 to 4,370 feet above sea; of no agricultural value; scant grazing; a small meadow in southeast $\frac{1}{4}$ gives a good yield of wild hay; some very good fir to 30 inches diameter on scattered ridges, possible lumber value.

SECS. 2 TO 11; SECS. 14 TO 21; SEC. 29, S. $\frac{1}{2}$; SEC. 30; SEC. 31, SW. PART.—All over 4,000 feet above sea, and on the northeast slope of Forge mountain; rocky country, covered with forests of small jack pine and brush; poor grazing.

SEC. 12.—Of less value, than sec. 1; 3,830 to 4,200 feet above sea; almost no grazing; great deal of underbrush on steep slopes; timber of very little value, jack pine to 10 inches, scrub fir and poplar.

SEC. 13.—Rolling land, 3,830 to 4,200 feet above sea; black loam soil in places, patches very small; too high for farm value; poor to no grazing; small jack pine to 10 inches diameter.

SEC. 24.—Rolling, 3,900 to over 4,000 feet above sea; burnt over in places; poor grazing; no agricultural value; a few scattered fir to 24 inches diameter, mostly poplar scrub and small jack pine to 4 inches.

SECS 25, 26, 27; SEC. 28, NE. PART; SEC. 29, NE. PART; SEC. 31, NE. PART; SECS. 32 TO 36.—All over 4,000 feet above sea, and on the south slope of the divide between the Thompson river and Guichon Creek valleys; mostly rocky, burnt over country, with scrub jack pine, poplars and a few isolated fir to 24 inches diameter; very little grazing here.

West of the easterly tier of sections any possible timber value disappears in forests of countless jack pine to 10 inches diameter and smaller. The country in secs. 25 to 27 and 34 to 36 has been burnt over, leaving scattered fir among poplar and jack pine scrub. All is poor grazing. Much fallen timber. Remainder of township is all over

4,000 feet in altitude, and covered with a dense growth of jack pine. Grazing is very poor as a whole.

A. V. Chase, D.L.S., 1910.—This township is divided through the northeast part by the valleys of Guichon and Barnes creeks which run approximately south 60 degrees east from the northwest corner of the township. No land of agricultural value was found therein, all the lands, with the exception of a small strip of probably two square miles in extent, being over 4,000 feet above sea-level, while the lands below this elevation are abruptly broken and rolling with some rock outcrops occurring through very small patches of workable land. The lowest elevation recorded was 3,770 feet above sea-level. Scattered ridges of fir are found only in the southeast corner of this township and the timber is not of commercial value. The remainder is covered almost completely with forests of jack pine up to 10 inches in diameter with some old burn in the northeasterly part. Grazing is rather poor in this township. The extreme dryness of this district is shown by the fact that on only seven days during June and July was there any appreciable rain and on only five other days was the weather showery. After the month of June frost was not experienced except at high altitudes unfavourable to cultivation, until the month of September, while the heat in the middle of the day was as a rule excessive.

Jos. E. Ross, D.L.S., 1910.—The land surveyed in this township lies along the valley of Guichon creek at an elevation of 4,000 feet above sea-level. It is situated about fifteen miles southwest of the village of Savona, accessible by good road and trail, and a rough road runs northwesterly to Ashcroft, twenty miles distant. The land is mostly broken and rolling and covered partly with jack pine, but fire has killed the bush in sec. 12 and 13. With the exception of a wild hay meadow, upon which a settler has located and made improvements, there is no land suitable for agriculture. The soil is generally sandy and rocky, while summer frosts are prevalent. There are numerous small swamps in which Guichon creek has its source. Beaver have built a continuous series of dams along the creek and in no part of the season's itinerary were the beneficial results of the "close season" so strikingly demonstrated. The animals are numerous and fairly tame. Geese and ducks are plentiful on Tunkwa and adjoining lakes.

Tp. 20, R. 22, W. 6th Mer. *A. V. Chase, D.L.S., 1910.*

This township on the north slopes to the south of the Thompson river, and consists of land rising almost continuously from elevations of about 1,600 feet above sea on the north boundary to about 5,000 feet above sea in the centre of the southern tier of sections. There is a great deal of rolling and flat land in the two northern tiers of section which is of fine workable, sandy loam soil with alkaline stretches in places. There appears, however, no source of irrigation for this area, the only stream running as late as the month of July being utilized for the water supply of Pennys. Considerable workable land is also found through the central part of the township but has no value agriculturally without abundance of water.

SEC. 1.—All over 4,000 feet above sea; has been burned to the south and only scattered timber is found, few fir to 24 inches diameter, mostly poplar and small jack pine with some open places; poor grazing in general.

SEC. 2, 3.—All over 4,000 feet above sea; high and rocky; a few ridges of fir to 18 inches diameter, small growth of jack pine with some small spruce, much underbrush; poor grazing.

SECS. 4, 5, 6.—All over 4,000 feet above sea; high rolling land; very rocky in sec. 4; a great deal has been burnt over leaving small scattered jack pine and some growth of poplar; scant grazing.

SEC. 7.—All over 4,000 feet above sea; more or less flat with sometimes rolling plain of sandy soil covered with small jack pine; fair grazing; no timber value.

SEC. 8.—All over 4,000 feet above sea; high hill covered with small growth of jack pine and underbrush; a strip of fir to 18 inches diameter about 50 acres in extent along north boundary; poor grazing.

SEC. 9.—From 3,770 to 4,960 feet above sea; exceedingly steep hill covered with small growth of jack pine to 4 inches diameter, and occasional scattered fir to 16 inches.

SEC. 10.—From 3,730 to 4,500 feet above sea; steep rolling slopes covered with small growth of brush jack pine and poplar; poor grazing in general; no timber value.

SEC. 11.—From 3,730 to 4,500 feet above sea; very precipitous in parts; rocky to the south; mostly covered with small growth of all kinds, jack pine, spruce and poplar to 10 inches diameter, a few fir to 18 inches on south part; poor grazing.

SEC. 12.—From 3,200 to 4,500 feet above sea; precipitous slopes in places, and usually steep; a large quantity of fir to 12 inches diameter with growth of underbrush; rather poor grazing.

SEC. 13.—From 2,630 to 3,800 feet above sea; west $\frac{1}{2}$ has no agricultural value; all steep precipitous and rolling; fair grazing; land covered with scattered fir to 20 inches diameter and much small growth to 4 inches diameter; east $\frac{1}{2}$ contains some open rolling country of workable soil in the north part, but without water this is useless; occasional fir and bull pine becoming more frequent in the south part, fir to 30 inches diameter, bull pine to 24 inches; fair grazing.

SEC. 14.—From 2,900 to 3,800 feet above sea; west $\frac{1}{2}$ has steep rolling slopes of no farm value, covered with small brush and fallen timber, some scattered fir to 30 inches diameter, of doubtful value; in east $\frac{1}{2}$ there is no agricultural value; large rock hill covered with scattered fir to 20 inches diameter; fair grazing.

SEC. 15.—From 3,000 to 3,820 feet above sea; steep, rolling, and of no value as farm land; west $\frac{1}{2}$ gives possible lumber value in fir to 18 inches diameter, scattered on east $\frac{1}{2}$; fair grazing throughout.

SEC. 16.—From 3,110 to 4,200 feet above sea; steep rock hill in west $\frac{1}{2}$; rolling and very steep in parts; fair timber section with fir to 24 inches diameter, much small growth occurs in south part, jack pine, spruce, etc.; some fair grazing.

SEC. 17.—From 3,240 to 4,100 feet above sea; soil in general workable, but section is too steep and rolling for agricultural purposes; a good deal of fir to 10 inches diameter in west $\frac{1}{2}$, with a thick growth of cottonwood and scattered fir to the south; west $\frac{1}{2}$ has a fair sized meadow; possibly 60 acres of fair sized fir near south boundary; fair grazing.

SEC. 18.—From 3,460 to 4,000 above sea; land is rolling, with some rock outcrops; no agricultural value; very little timber value except along south boundary, small jack pine, abundance of pine grass in this section.

SEC. 19.—From 3,000 to 3,460 feet above sea; a few workable slopes, but in general too steep for agricultural value; a very fair timber section in fir 20 to 30 inches diameter; abundance of timber grass.

SEC. 20.—From 2,740 to 3,460 feet above sea; west $\frac{1}{2}$ has some workable slopes of sandy loam soil, needing water; scattered fir to 20 inches diameter with considerable small fir and spruce, fair grazing; east $\frac{1}{2}$ is rolling and hilly in parts and unfit for agriculture, scattered fir as a rule, but occasionally of timber value to 20 inches diameter; fair grazing.

SEC. 21.—From 2,500 to 3,220 feet above sea; rolling land, in general too steep for agriculture; south $\frac{1}{2}$ shows fair value in fir to 24 inches diameter, some scattered bull pine, abundance of pine grass; north $\frac{1}{2}$ is more open but very rolling, scattered fir with some cottonwood and small growth; fair grazing.

SEC. 22.—From 2,410 to 3,110 feet above sea; south $\frac{1}{2}$ is steep, rolling land with some workable patches needing water, covered with brush and a few good sized fir to 30 inches diameter, poor grazing; northwest $\frac{1}{4}$ is more rocky and rolling, a few fir to 30 inches diameter, fair grazing; northeast $\frac{1}{4}$ is fairly flat with light loam soil, this is of no agricultural value without water, mostly open land, fair grazing.

SEC. 23.—From 2,270 to 3,000 feet above sea; west $\frac{1}{2}$ is mostly open land, soil, light loam, workable in small patches, but useless without water, poor grazing except in bottoms; east $\frac{1}{2}$ is hilly and abruptly broken, no agricultural value, some scattered trees mostly open, fair grazing.

SEC. 24.—From 2,450 to 2,900 feet above sea; west $\frac{1}{2}$ is composed of hilly and rocky land, with small parts workable, but of too small acreage for farming purposes, fair grazing, a good deal of small fir to 3 inches diameter especially towards the south; east $\frac{1}{2}$ is very similar to west half, but with less rock, workable areas too small for value, open country on north part, with scattered fir and bull pine to 18 inches diameter in south part.

SEC. 25.—From 1,900 to 2,700 feet above sea; open rolling and often precipitous slopes; no possibility of irrigating the small workable patches; essentially grazing land; of fair value.

SECS. 26, 27.—From 1,900 to 2,610 feet above sea; these sections are composed of open, rolling land; in places, fair, sandy loam soil, but the workable places are of rather too small area as a rule for farm purpose; much broken by hills and gullies; scattered fir and bull pine to the south, of no commercial value; grazing poor to fair on heights and slopes, good in bottoms.

SEC. 28, E. $\frac{1}{2}$.—From 2,000 to 2,730 feet above sea; some workable flats among steep slopes; sandy loam soil; all useless for agricultural purpose without water; some 30 inches fir to south in gulches; poor grazing in general.

SEC. 28, W. $\frac{1}{2}$; SEC. 29, E. $\frac{1}{2}$.—From 2,170 to 2,760 feet above sea; all open, rolling land, much broken by hills and coulées; some workable flats of sandy loam soil occur, but in no case in areas over 5 acres in extent in one place, these are useless agriculturally without abundant irrigation; no timber value, a little scrub growth to the south; fair grazing on flats and bottoms.

SEC. 29, W. $\frac{1}{2}$.—From 2,460 to 3,040 feet above sea; rocky, rolling land with a little scattered fir and bull pine on south part, fit only for grazing, which is fair.

SEC. 30.—From 2,610 to 3,040 feet above sea; steep, rocky, and much broken especially near the creek valley; fit only for grazing, which is fair, a fair quantity of 18-inch fir on northwest $\frac{1}{4}$, scrub growth only in other parts.

SEC. 31.—From 1,880 to 3,000 feet above sea and over on hill; high and broken, rocky; some fir to 30 inches diameter, but not in quantity to be of value; poor grazing.

SEC. 32.—From 1,880 to 2,610 feet above sea; rough, rolling and broken, with rock outcrops; small flats, up to 5 acres, of sandy loam soil occur, which are useless without water for agricultural purpose; all open land; rather poor grazing as a whole.

SEC. 33, S. $\frac{1}{2}$, N. $\frac{1}{2}$ (FRAC.).—From 1,500 to 2,330 feet above sea; rough, rolling and broken, with rock outcrops; small flats up to 5 acres, of sandy loam soil occur, which are useless without water for agricultural purpose; all open land; rather poor grazing as a whole.

SEC. 34, S. $\frac{1}{2}$, N. $\frac{1}{2}$ (FRAC.).—From 1,500 to 2,040 feet above sea; good soil, but rather too rolling and broken for agriculture; some small, workable flats needing water; numerous cut banks and gullies; poor to fair grazing.

SEC. 35, S. $\frac{1}{2}$, N. $\frac{1}{2}$ (FRAC.); SEC. 36 (FRAC.).—From river level to 2,160 feet above sea; open land broken by hills and cut banks; very stony in places; fit only for grazing, which is rather poor as a whole.

A. V. Chase, D.L.S., 1910.—The lands included in this township are composed to a very great extent of high lands, being heights and slopes on and adjacent to Savona, Forge and Glossy mountains and a large hill near the south boundary of the township. Probably more than half of this area is over 4,000 feet above sea-level, the remainder being slopes and flats between these hills and Thompson river, in the valleys of Barnes and Guichon creeks, in Tunkwa lake basin and in Three-mile creek valley. There remains undisposed of along the creek-bottom in Three-mile Creek valley, in township 20, range 21, a small strip of land of sandy loam soil with little gravel. The altitude of this land is in general about 2,190 feet above sea-level.

While fertile, these lands are quite useless for cultivation without an abundance of water, the soil being very dry and the rainfall scant. The valley of Guichon creek contains the only land of agricultural value in townships 18, ranges 21 and 22. Here the only settler attempting cultivation other than hay growing occupies lot No. 780 at the south boundary of township 18, range 21. This settler depends entirely on irrigation for his crops and finds it very difficult to mature even the more hardy cereals. This year his hay crop was a partial failure on account of lack of sufficient water. Quite often root crops do not mature at all and they are sometimes cut off by frost in the early summer. His lands are at an elevation of from 3,400 to 3,500 feet above sea-level. Some small undisposed-of flats remain in this valley but their rolling nature renders profitable irrigation difficult. The land slopes from this valley to the heights of Forge mountain on the west and high rolling country on the east, and is well covered with timber. Township 18, range 21, is fairly well timbered and an excellent range of large fir and bull pine is found on the heights in the centre of the township while on those lands farther east the timber is more scattered and mixed with considerable small jack pine, spruce and poplar. Some ranges of fir occur immediately to the west of Guichon creek valley but their commercial value is rather doubtful. To the west in township 18, range 22, the land rises continuously to the Forge mountain range and the only land of value herein lies in section 36 where a large hay meadow is found. A few fir of fair size occur along the east boundary but these disappear to the west and leave nothing but ranges of thickly growing jack pine. All the land in township 18, range 22, with the exception of about one and a half miles in the northeast corner, is over 4,000 feet above sea-level. It is quite rocky in general and many areas of bald rock appear. No timber of value is found therein. In township 18, ranges 21 and 22 the grazing is essentially timber grass which is found in abundance where the timber is large and of commercial value. A good wagon road connecting Savona and Lower Nicola traverses range 21 under the area described. The extreme dryness of this district is shown by the fact that on only seven days during June and July was there any appreciable rain and on only five other days was the weather showery. After the month of June frost was not experienced except at high altitudes unfit for cultivation, until the month of September while the heat in the middle of the day was as a rule excessive.

Tp. 21, R. 22, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

Northwesterly part undisposed of. This is a very rough area rising steeply from an elevation of from 1,400 to 1,600 feet above sea through sections 8, 9 and 10 to 4,000 feet above sea in secs. 29 and 30. There is no land of evident agricultural value in this area, it being almost wholly of a rough, rocky nature and where rock is not evident the land is too steeply rolling to be of any use, agriculturally.

The south part of secs. 8 to 10 and 15 to 18 is of little value except for grazing, and this is pretty well eaten out in this area. Scattered scrub fir and bull pine are seen in the highest altitudes. Much solid rock outcrop is seen in south parts.

To the north more timber is seen, scattered through secs. 19 to 21 but more thickly placed in secs. 29 to 32. These sections consist of rocky ridges or spurs falling to the southeast, covered with a fairly thick growth of small fir. Very little grazing is found on account of the amount of solid rock formation. The timber is not of merchantable value.

Tp. 22, R. 22, W. 6th Mer. *R. D. McCaw, D.L.S., 1909.*

SEC. 7, NW. $\frac{1}{4}$.—Gently rolling land in northwest part with marsh in north part, steep slopes rise in southeast part; 1,540 to 2,000 feet above the South Thompson river; soil sandy loam, parts very stony; part is open land in vicinity of marsh; fir and bull pine to 24 inches occur scattered through willow, poplar and fir scrub, on slopes; irriga-

tion not likely needed, 25 per cent to 50 per cent farm land in northwest part; fair grazing throughout.

NE. $\frac{1}{4}$ (FRAC.).—Sloping land steep and broken in south part; 1,580 to over 2,000 feet above the South Thompson river; sandy loam, usually stony; fir to 24 inches diameter in scrub, possible timber value; fair grazing throughout.

SEC. 18, SW. $\frac{1}{4}$, SE. $\frac{1}{4}$ (FRAC.).—Gradual slopes rising towards west and east becoming steep and rocky in west part; very stony loam; fir and bull pine to 24 inches with some jack pine and poplar; 25 per cent farm value; irrigation if necessary could be obtained from Cultus lake, for lower parts.

NW. $\frac{1}{4}$ (FRAC.).—Rough slopes in east part, becoming very steep and rocky in the west half; altitude 1,480 feet and upwards above the South Thompson river; soil, brown stony loam; scrubby fir and bull pine of poor quality; scant grazing land; south-east part has small area of low grade farm land.

NE. $\frac{1}{4}$ (FRAC.).—Steep, rough broken slopes falling to Indian reserve, scrubby bull pine and fir, scant grazing land.

SEC. 20, NE. $\frac{1}{4}$ (FRAC.), SE. $\frac{1}{4}$ (FRAC.); SEC. 21, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$ (W. $\frac{1}{2}$).—Rough broken slopes often rocky; 1,020 to 1,670 feet above the South Thompson river; rock outcrops appear in many places; scattering scrubby fir and bull pine of doubtful value; fair grazing land; some of slopes are open.

SEC. 23, SW. $\frac{1}{4}$, SE. $\frac{1}{4}$ (N. $\frac{1}{2}$), NE. $\frac{1}{4}$ (S. $\frac{1}{2}$); SEC. 14, NW. $\frac{1}{4}$; SEC. 24, NW. $\frac{1}{4}$, NE. $\frac{1}{4}$ (N. $\frac{1}{2}$); SEC. 25, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$ (S. $\frac{1}{2}$).—Steep broken slopes generally, falling towards Criss creek and Deadman river; useless for farming; fir and bull pine scattered throughout, with scrub in places; many of slopes are open and afford good grazing; timber is of doubtful value, the largest trees are very much scattered and it would be difficult to get them out.

SEC. 27, SW. $\frac{1}{4}$.—Steep, broken rocky slopes on each side of Deadman river, except about 25 acres of bottom land in south part; altitude of this is 460 to 500 feet above the South Thompson river; soil, rather stony brownish loam; a few bull pine, scattered; part has been cultivated by Richard Williams; 50 to 75 per cent value as farm land; part is adapted for fruit, irrigation obtained from Deadman river; west of river slopes have scant grazing.

SEC. 28, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$.—Much broken and very rocky; 600 to 1,300 feet above the South Thompson river; a few scattering bull pine trees; when examination was made there was no growth of grass, but evidence showed that it had been eaten off, is possibly grazing land of low value.

SEC. 28, NW. $\frac{1}{4}$ (S. $\frac{1}{2}$), SW. $\frac{1}{4}$; SEC. 29, SE. $\frac{1}{4}$.—Rough rolling land rising in steep slopes in places; 1,300 to 1,800 feet above the South Thompson river; soil very stony loam with many outcrops; scattering fir and bull pine up to 18 inches diameter, a few larger trees, doubtful value; fair grazing land.

SEC. 33, E. $\frac{1}{2}$.—Rough broken slopes of disintegrated rock with much bed rock outcropping; has had a poor growth of grass and is scant grazing land; open and a few scattering fir and bull pine.

Tp. 23, R. 22, W. 6th Mer. *R. D. McCaw, D.L.S., 1909.*

SEC. 2, W. $\frac{1}{2}$; SEC. 3, SE. $\frac{1}{4}$.—Very rough broken land rising in altitude from 670 feet upwards above the South Thompson river; soil is chiefly coarse disintegrated rock with outcrops in places; very scant grazing; a few scattering bull pine and fir.

SEC. 10, NE. $\frac{1}{4}$.—Along Deadman river about 30 acres of bottom land covered with poplar and scrub; 730 feet above the South Thompson river; sand and sandy loam with some stone; 40 per cent farm land; west part is broken slope of low grazing value; some scattering fir and bull pine.

SEC. 11, W. $\frac{1}{2}$.—Steep slopes, broken, rising from Deadman river; some fir and bull pine but of poor quality; scant grazing exists throughout.

SEC. 14, SE. $\frac{1}{4}$ (E. $\frac{1}{2}$).—Small area of bottom land in north part along Deadman river; altitude 740 feet above the South Thompson river; soil, black muck; good farm land; rest of tract is steep hillside timbered with small fir and jack pine in scrub.

NW. $\frac{1}{4}$.—Small strip of gentle slope in south part, north of which steep, rocky slopes rise; altitude 760 to 850 feet above the South Thompson river; soil, sandy loam; at present cultivated by R. Beamish; 50 per cent fruit land; irrigation not likely needed.

LEGAL SUB. 4.—Almost level land adjoining Deadman river; 730 feet above the South Thompson valley; soil, sandy loam; much has been cleared and some buildings have been built by Mr. Beamish; 50 per cent farm land.

SEC. 15, SE. $\frac{1}{4}$.—Generally much broken slopes rising from 730 feet above the South Thompson river; along the east side is a small area of workable land at present occupied by R. Beamish; this has value as fruit land of about 50 per cent, but is so small that it might better be sold to Mr. Beamish who has houses and stables thereon; broken land has fair grazing value; some scrubby fir and bull pine grow scattering.

SEC. 24, NE. $\frac{1}{4}$ (W. $\frac{1}{2}$).—Fairly high land bordering the Deadman river; 800 feet above the South Thompson valley; soil, sandy loam; birch and poplar to 12 inches with much scrub; 25 per cent fruit land.

SEC. 25, SW. $\frac{1}{4}$ (E. $\frac{1}{2}$).—Below steep hillside on east is a strip of gently sloping land; 810 to 860 feet above the South Thompson river; sandy loam soil; has been cleared by Mr. Beamish; 35 per cent value as fruit land; steep slopes on west are worthless.

A. V. Chase, D.L.S., 1911.—This township is traversed from north to south by deep gorges of Deadman river and Gorge creek, leaving all the land, except in these valleys, either very steeply sloping or very high in altitude. Almost no land of agricultural value is left undisposed of in the township except some small broken areas along Deadman river which in themselves are too small to warrant the expense of clearing and grubbing that would have to be done. Outside of the valleys the township is composed of steeply rolling, and in some cases precipitous hills, particularly in the southwest part. In the north and west are timbered plateaus with stretches of fir, jack pine and bull pine interspersed with some small meadows. Grazing is very fair on plateaus.

SECS. 1, 2, 11, 12, AND 13.—This area comprises a steeply sloping range of hills running in elevation from 2,000 feet at Deadman river in the south part of the township to 4,000 feet and over, above the sea, in sec. 12. The land is all too steep for agricultural purposes except in the case of small areas immediately along Deadman river. These small undisposed of areas of workable land are in general low lying and covered with a veritable thicket of all kinds of brush together with fallen logs and standing cottonwood and poplar. It is exceedingly improbable that the value of these lands would warrant the expense of clearing and grubbing necessary to make them workable. There are also some fairly flat benches having gradual slope, needing irrigation to the east of Deadman river, but near the river, the land is very steep. Profitable irrigation of these areas is doubtful. Also all the water in Deadman river is, as far as can be learned, recorded. Timber is good toward the summit in fir to 25 inches but runs smaller as one nears the river bottom. Grazing is fair throughout.

SECS. 3, 10 AND 15.—Elevation, from 2,000 to 3,000 feet above the sea; almost altogether steeply rolling hills with a good deal of outcrop of solid rock precipice in the neighbourhood of Barricade creek and Gorge creek; very little value of any kind except as grazing land, grazing is rather poor; timber is scattering jack pine and cottonwood with small fir.

SW. $\frac{1}{4}$ OF TOWNSHIP.—Elevation, from 3,000 to 4,000 feet and over, above the sea; very little value in this area. In sections 4, 9 and 16 many steep rock precipices and gulches occur, having only scattered stretches of fir of small size. Much of this area, especially toward the west boundary of the township is covered with consequently

little or no grazing. Fir in scattering ranges occupies considerable of secs. 5, 8 and 17, but is of very little commercial value.

PORTION BOUNDED BY DEADMAN RIVER, TOBACCO AND GORGE CREEKS.—In general a very rough area rising from an elevation of from 2,050 feet at Deadman river, steeply to the northwest to an elevation of 4,000 feet in from a mile and a half to two miles distance therefrom. From there northwestward the rise is more gradual and country rolling. No agricultural value is met with in this area as all lands below the 4,000 feet elevation are steep to precipitous. The area is all, more or less, timbered with stretches of jack pine to 10 inches and 12 inches though scattering fir of large size is met with. Fire has done a lot of damage here, the country being covered with stretches of all burn and windfall. Grazing is fair throughout and occasionally small meadows are met with.

The northwest part of the township west of Gorge creek is very similar being nearly all over 4,000 feet elevation. No lumber value is found though all the land is timbered with stretches of jack pine to 10 inches and with occasional fir. It forms good summer range for stock.

SEC. 24.—Part east half, elevation about 2,100 to 2,500 feet above the sea; some low lying land along here covered with thickets of alder-brush, hazel, cottonwood and poplar; very doubtful if high enough ground for agricultural purposes; apparently flooded most of the time; very little value of any kind.

SEC. 36.—Elevation, from 2,200 to 3,200 feet and over above the sea; a very steep section rising to the north and northwest through rocky slopes; it is of no value but for scattered timber of fir to 20 inches; there is much damage done by fire which burned during this season (1911).

Tp. 24, R. 22, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

With the exception of a small portion in the southeast corner of about two and one-half or three square miles, all this township is over 4,000 feet elevation. No agricultural value found. It is in general high and rolling, covered with small jack pine timber with stretches of good sized fir. None of this timber is of any merchantable value. A few spruce to 15 inches are found in muskeg about sec. 9. Some fair grazing is found in the vicinity of Gorge creek in the western part and also along the upper end of Tobacco creek, but the eastern part of the township is badly burned and fires are burning at present, July, 1911.

Tp. 11, R. 23, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

Practically no detail examination was made of this township. With the exception of a small area in the north centre where Spius creek crosses the north boundary there is no agricultural land in the township.

Spius creek forks at the north boundary of the township, the main creek flowing northeasterly through the west part of the township, and the branch flowing slightly west of north through the east part of the township to the junction. In the valley of the main creek or west fork the hills slope upward right from the creek bottom and their lower slopes are rocky and sparsely timbered in places with scrub fir and small jack pine. There is practically no grazing. As one travels southward along the main creek the hills become more thickly timbered but the timber is small stunted fir and pine of no commercial value.

In the valley of the east branch of Spius creek a strip of land has been built up on either side by sand wash but it is of too sandy a nature to be of value agriculturally. The hills rise sharply from near the creek bottom covered with scattered pine and fir free of underbrush. Grazing is very poor throughout.

SEC. 33.—At an elevation of 2,800 feet above sea there is a small bench about 15 acres in extent, partly in the northwest and partly in the northeast quarter. It is of

good sandy loam soil but is rather stony. It is covered mostly with a dense growth of small fir and pine. The remainder of the section is steep timbered hilly land. The timber is small fir and pine. Poor grazing.

Tp. 12, R. 23, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

This township is traversed from south to north by the valley of Spius creek and through the northwest part of Prospect valley. These valleys divide the township into three distinct areas, the north part, the southwest part and the southeast part. Much land of excellent soil is found throughout the main valleys but that land whose agricultural value is most notable lies in the valley of Spius creek in the south part of the township. There is considerable land in the north part of the township at elevations from 3,000 feet to 3,500 feet above sea, gently sloping, of excellent soil. It would if utilized be necessarily worked without irrigation. The land is timbered throughout.

SECS. 1, 2 AND 3.—Elevation, from 2,750 feet at the west boundary of sec. 3 to about 4,000 feet in sec. 1. A few acres on the extreme west part of the southwest quarter of sec. 3 are good flat agricultural land of sandy loam soil covered with small sized pine and fir, but the remainder of sec. 3 and secs. 2 and 1 rise steeply to the east and present no agricultural value. They are covered with pine and fir 16 inches to 18 inches in size. The grazing is only fair, being principally of timber grass.

SEC. 4.—Elevation, from 2,690 feet to 3,000 feet. The east half contains about 150 acres of excellent bench land at an elevation of 2,750 feet above sea. It is a trifle stony in the south part, but in the main is composed of a good sandy loam soil with a trace of gravel. It is covered with pine and fir 12 inches to 16 inches in size. The grazing is scant.

The west half is chiefly steep side hill covered with a poor class of scrubby fir and pine. The grazing is poor.

SEC. 5 TO 8.—Steep side hill rising rapidly to the west, no agricultural value. Timber small sized pine and fir with considerable small growth. Scant grazing.

SEC. 9.—Elevation, from 2,600 feet to 3,500 feet. The southeast quarter east of the creek contains a small flat of about 25 acres of bench land at an elevation of 2,700 feet above sea. The soil is sandy loam slightly stony and is covered with small and young pine and fir.

West of the creek in this section there is a certain acreage in small benches along its banks. These would have agricultural value only with irrigation. The soil is very rich loam. The timber is small sized pine and fir. Grazing is rather poor. The remainder of the section is steep side hill covered with pine and fir of small size.

SECS. 10 AND 11.—Elevation, from 2,600 feet at Spius creek to about 4,000 feet above sea. The lands in this area rise steeply to the east and are very rough. Timber is small jack pine in sec. 11 but a few large bull pine are found in the west part of sec. 10, the grazing is fair.

SECS. 14, 15, 22 AND 23 EAST OF RIVER.—Rise from 2,530 feet at the water's edge to over 4,000 feet. These sections are practically without value, being rough throughout and very rocky on the west slopes. The timber is of a small and very stunted nature and shows little commercial value. It is chiefly pine and fir with jack pine in the higher altitudes.

SECS. 15, 16, 21 AND 22 WEST OF SPIUS CREEK.—Elevation, from 2,530 feet at the creek to about 3,500 feet above sea in the west part. This area is classed as timbered land. There are, however, a number of areas of flat or gently sloping land of rich sandy loam soil scattered at various points within a half mile of Spius and Prospect creeks. These as a rule seldom contain over 10 acres of workable land in one locality and it is extremely unlikely that they could be profitably irrigated on account of their altitude above any source of irrigation. This area is timbered throughout with fir and pine to 18 inches in size, in fair quantity. The grazing is rather poor.

PORTION WEST OF SPIUS CREEK AND NORTH OF PROSPECT CREEK.—This area is best described as a whole. Elevations run from 2,270 feet at Spius creek at the north boundary of the township to over 4,000 feet above sea on the summit between Spius creek and Prospect valley. There is in this area land at an elevation as high as 3,500 feet above sea, but in general between the 3,000 and 3,500-foot contours, which is very fertile. It is of gently rolling outline with a fairly steep slope towards the creek bottoms and is composed chiefly of a rich sandy loam soil with a darker loam in the poplar bottoms. The land is timbered throughout but the general run of pine and fir is not of merchantable size. Many good sized pine and fir are found, however, in the north part.

While this is generally classed as timbered land its possible value as agricultural land is coming under the notice of settlers. Although the writer is not satisfied as to its agricultural possibilities being real, a number of squatters have staked out claims and have every intention of making at least an attempt to utilize these areas for hay or the hardier vegetables and cereals. In the writer's opinion the fact that practically no stock has been turned out to graze in these areas, so leaving an uninterrupted growth of underbrush and grasses together with the protection afforded by the timber has had much to do with the luxuriant growth that is noticed in this area. It is also a fact, however, that these areas are in general over 3,000 feet above the sea and with the attendant moisture of that altitude might be turned to good account in dry culture by experienced men. Opposed to this is the fact that these lands have a southern exposure and would dry out much more quickly on that account. Grazing is abundant.

No one could be discovered who could give authentic information as to temperatures but it is popularly believed that the temperatures are no more severe than those of the country surrounding Merritt, B.C., the elevation of which is somewhat over 1,000 feet lower than the most of these lands.

Tp. 13, R. 23, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

The undisposed of land in this township is valuable for its timber which is of a particularly good quality in general. Very little agricultural land remains undisposed of the land rising steeply to the east and west of Spius creek which flows through the easterly part of the township. Quite a number of settlers have located in the northeasterly part and they have left little land fit for cultivation.

SECS 4 AND 9.—From 2,850 feet and upwards above sea. These sections rise steeply to the west through hilly and broken country of no agricultural value. They are chiefly remarkable for an excellent growth of bull pine 18 inches to 30 inches in size. The grazing is poor.

SEC. 15.—Elevation from 2,000 feet to 3,000 feet. This section rises steeply from Spius creek westward leaving a small area of 10 acres of agricultural land in the southeast quarter. This is of sandy loam soil and is fit for vegetables or cereals. The remainder of the section is steep and broken. As this section is included in timber berth No. 508, no mention is made of the timber.

SEC. 16.—Elevation, from 2,850 feet upwards. This section rises steeply to the west through hilly and broken country of no agricultural value. A fair amount of bull pine and fir to 24 inches with little underbrush. Grazing is rather poor.

SEC. 22.—Elevation from 2,210 feet to about 3,000 feet. This section is mostly steep sidehill and has no agricultural value. It is included in timber berth No. 508, so no mention is made of the timber.

SEC. 23.—Elevation, 1,950 feet to about 3,000 feet. The east half of this section is all rough timbered hills covered with a good class of pine and fir 12 inches to 30 inches in the northeast quarter and a somewhat poorer quality in the southeast quarter.

The southwest quarter is hilly and rough timbered on the east side of Spius creek. West of Spius creek in this quarter is a good sandy loam bench about 25 acres in extent at an elevation of 2,050 feet. This is good clean land and is timbered with good quality bull pine to 20 inches. Grazing is poor.

The northwest quarter contains a small bench of 5 acres east of Spius creek similar to that in the southwest quarter but otherwise the quarter is rough hilly and timbered with pine to 20 inches.

SEC. 25, S. $\frac{1}{2}$ AND SE. $\frac{1}{4}$ SEC. 26.—The area rises sharply to the east from the water's edge of Spius creek through rough timbered land and presents no agricultural value. It is timbered with pine and fir of fair size. The grazing is poor.

SEC. 27.—Elevation, from 2,200 feet to 3,000 feet. The north half of the northeast quarter contains about 15 acres of agricultural land of sandy loam soil. This has buildings and improvements and appears to be settled land.

The west half is very hilly and cut up. It rises steeply to the west and is covered with good bull pine and a few fir to 24 inches. The grazing on this section is rather poor.

SECTION 32.—Elevation from 3,500 feet to over 3,500 feet in the west. Timbered land of no agricultural value. Mostly steep sidehill with good pine to 24 inches and a few scattered large fir. Fair grazing of timber grass.

SEC. 33 (NORTH PART).—Elevation from 2,800 feet to 3,600 feet. The northwest quarter contains about 50 acres of jack pine bench at an elevation of 3,100 feet. It is good clean sandy loam soil and shows possibilities in dry culture. There is a small stream flowing near by but the flow does not seem to be large enough to consider in connection with irrigation. Remainder of the quarter section is covered with fair-sized bull pine and fir.

Although a homestead entry does not appear to date on the northeast quarter there is a settler there with considerable improvements done.

The south part of the section is very steep and hilly. It is all good timber land with bull pine and fir to 24 inches. The grazing is fair.

SEC. 34 (PART VACANT).—Elevation, from 2,400 feet to 3,150 feet. The southwest quarter contains some workable land but it is very rolling and of doubtful value. There is also 8 acres of good poplar bottom land of dark loam soil. The timber is good pine and fir. Although no homestead entry there is a settler here.

The northeast part east of Lot 779 is a steep rocky area nearly all rock side hill. The timber is rather small and scrubby as a rule. Poor grazing.

SEC. 35 (W. $\frac{1}{2}$).—Elevation, from 2,000 feet to 2,570 feet. The southwest quarter is broken and hilly with a number of small flats of insignificant acreage. It has, however, a quantity of good pine to 24 inches. That part of the northwest quarter undisposed of is very broken and hilly and timbered with pine to 24 inches. The grazing is rather poor.

SEC. 36 (PART NW. $\frac{1}{4}$).—Elevation, from 1,840 feet to 2,200 feet. This is a hill country with a small sandy loam flat in L.S.'s 12 and 13 about 15 acres in extent. It is timbered with pine to 18 inches. Grazing poor.

The west part of this township not hitherto described herein is all steeply rolling timber country rising to summits in the east part of township 13, range 24. It is without agricultural value but is timbered throughout with a fair class of pine and fir which in many areas is quite evidently of merchantable value. Grazing is good as a rule in the west part of the township.

Tp. 14, R. 23, W. 6th Mer. (Fraction east of Nicola river.) *R. D. McCaw, D.L.S., 1910.*

Lower Nicola Indian Reserve No. 10 borders the Nicola river through from sec. 11 northeasterly to sec. 33, and reserve No. 9 is in the east central part. The Indians along the river cultivate a small area of land using irrigation. Reserve No. 9 is chiefly for pasture although a portion in the bottom of the valley running north is cultivated and hay grown. In secs 1 and 2 (including land south of the river) the settlers grow splendid crops of grain, hay, and various vegetables while fruit is also cultivated with success, but in each case irrigation is used. The altitude of much of this area is under 2,000 feet.

SEC. 1, NE. $\frac{1}{4}$, NW. $\frac{1}{4}$ (FRAC.); SEC. 12 (FRAC.); SEC. 13. SE. $\frac{1}{4}$.—Steep rocky slopes falling southerly and westerly and towards Nicola river; parts much broken; no agricultural land except a small flat along the river in sec. 12; altitude is 1,600 to 3,700 feet above sea; some good fir and bull pine to 24 inches diameter and larger in parts of fair value, lower slopes have thinly scattered timber; poor to fair grazing.

SEC. 11, S. $\frac{1}{2}$ (FRAC.).—Narrow strip of flat along the river with some bench land, then rising in steep rocky slopes to the north; soil on flat is sandy and gravelly loam, which with irrigation should be suitable for fruit; much poplar, willow, and scrub growths with parts open, and fir and bull pine on higher slopes; grazing is rather poor.

SEC. 11, N. $\frac{1}{2}$; SEC. 14, W. $\frac{1}{2}$, NE. $\frac{1}{4}$ (FRAC.); SEC. 15, NE. $\frac{1}{4}$ (FRAC.).—Composed of rocky, useless slopes usually steep; small area of flat land along river in northwest $\frac{1}{4}$ of sec. 11, which could be utilized for fruit if irrigation were applied; some bull pine and fir on higher slopes of possible timber value, on lower slopes timber is scant and of poor quality; poor to fair grazing.

SEC. 13, SW. $\frac{1}{4}$ (FRAC.); SEC. 14, SE. $\frac{1}{4}$ (FRAC.).—Small creek flows south through southwest $\frac{1}{4}$ of sec. 13; land in vicinity rolling and much workable extending into southeast $\frac{1}{4}$ of sec. 14; sandy loam, with parts having black loam to 4 or 5 inches, and gravelly clay subsoil; 2,300 to about 2,700 feet in altitude; needs irrigation; slopes to east and west are steep and rocky; bull pine and fir to 24 inches and larger, of good quality, some scrub; fair grazing.

SEC. 23 (FRAC.); SEC. 22, E. $\frac{1}{4}$ (FRAC.).—Steep broken slopes often rocky, falling to a creek flowing west to the Nicola river; no possible farm land; fir and bull pine of poor quality usually, becoming thinly scattered in parts; poor to fair grazing.

SEC. 25 (FRAC.).—Steep slopes falling to creek flowing southwest; no agricultural land; scattered fir to 24 inches and a few bull pine, some small jack pine and old *brulé* with windfalls; fair grazing.

SEC. 26.—Generally steep and broken; some small isolated areas of workable land, but too small for value; 3,100 to 3,900 feet above sea; very stony and gravelly, much rock; fir and bull pine to 24 inches of fair value; grazing is usually fair.

SEC. 27, SE. $\frac{1}{4}$, W. $\frac{1}{2}$ (FRAC.); SEC. 28, E. $\frac{1}{2}$ (FRAC.); SEC. 33, NW. $\frac{1}{4}$ (FRAC.), E. $\frac{1}{2}$ (FRAC.); SEC. 34, SW. $\frac{1}{4}$.—Rough broken slopes and steep, with a great deal of rock; no agricultural land; scattered fir and bull pine of poor quality, usually, and on lower slopes very thinly scattered; rather poor grazing.

SEC. 27, NE. $\frac{1}{4}$; SEC. 34, NW. $\frac{1}{4}$, E. $\frac{1}{2}$.—Usually broken and steep with parts rolling; no agricultural land; parts rocky; 2,570 to 3,500 feet above sea; scattering fir and bull pine to 24 inches, of lumber value; poor to fair grazing.

SEC. 35, S. $\frac{1}{2}$.—Rolling slopes with sandy loam soil; 3,500 to 3,900 feet in altitude; no agricultural value; fir and bull pine to 30 inches, average 24 inches, lumber value; very fair grazing.

SEC. 35, N. $\frac{1}{2}$.—Rolling slope and generally workable, falling to north; 3,100 to 3,800 feet above sea; sandy loam soil; north part of possible farm value, but needs irrigation; fir and bull pine to 30 inches, average 24 inches, lumber value; very fair grazing.

SEC. 36.—Gradual slopes in parts and again steep, broken and hilly; 3,500 to 4,400 feet above sea; no agricultural value; some fir and bull pine to 30 inches, of possible value, jack pine and scrub, with some windfalls, fair grazing.

A. V. Chase, D.L.S., 1912.—(PART WEST OF THE NICOLA RIVER).—This is a very rough area. The land rises steeply to the west almost from the banks of the river and very little of the undisposed of land could be profitably utilized for agricultural purposes. There is considerable good timber in the southwest part of the township.

SEC. 1 (WEST OF THE RIVER).—Elevation, from 1,700 feet to 2,000 feet. A small strip of land adjoining Spius creek remains vacant. It is rather gravelly and of small agricultural value. Scattered small pine.

SEC. 2.—Elevation from 1,730 feet to 2,570 feet. A small strip of good quality bench land of sandy loam soil is found in the east half immediately east of Lower

Nicola Indian Reserve No. 10. This flat is sandy and would require abundant irrigation. It is covered with pine 16 inches, and the grazing is scant. The west part of the township is chiefly steep side hill and of no value agriculturally. It is timbered with a fair growth of bull pine and fir to 20 inches. Grazing is poor.

SEC. 3.—Elevation from 1,840 feet to 3,000 feet. Nearly all this section is high rocky plateau covered with medium-sized pine and fir. There is a small area in the west part of the southwest quarter immediately north of Lot 779. This contains about 5 acres of poplar bottom of dark loam soil at an elevation of 2,880 feet, which should produce a good hay crop.

SEC. 4.—Elevation from 2,880 feet to 3,470 feet. The SE. $\frac{1}{4}$ contains about 20 acres of poplar bottom fit for hay if cultivated. The remainder of the section is steeply rolling land timbered with a very good quality of bull pine and a few scattered fir. The grazing is fair.

SECS. 5 AND 6.—Elevation from 3,470 to 4,000 feet and over. No agricultural value. All steeply sloping land rising to the west. It is fairly well timbered throughout with bull pine and fir to 16 inches, but stretches of pine to 24 inches are met with. The grazing is fair to good.

SECS. 7 TO 10.—Elevation from 1,770 feet near the Nicola river to over 4,000 feet in the west part of the township. This area is composed chiefly of the valley of Nooaitch creek, which is steep V-shaped valley throughout a great deal of its length. Immediately west of Lower Nicola Indian Reserve No. 10 in the northeast quarter of section 9 lies a sandy loam bench about 5 acres in extent. This, with a few scattered areas of bench land along the creek as far west as sec. 7, from one to ten acres in extent, constitute the agricultural land in this valley. The more westerly of these areas are somewhat difficult of access, and all of them are accessible only by pack trail. There is, however, a quantity of excellent bull pine, particularly in secs. 7 and 8 in the vicinity of the creek. Bull pine and fir were found in quantity up to 30 inches on the stump. The general quality of the timber is good, there being few trees of stunted nature. This is a good grazing on the north slopes and on the south slopes in the west part of the township.

The remainder of the township west of the river is a very rough area and is composed of steeply rolling hills running to rock formation in the northwest part of the township. It is valuable only for its timber and grazing possibilities. The timber is smaller in size and inclined to be more scrubby than in the valley of Nooaitch creek. It is also much more inaccessible. Grazing is only fair.

Tp. 15, R. 23, W. 6th Mer. (FRACTION EAST OF NICOLA RIVER.) *R. D. McCaw, D.L.S., 1910.*

A ridge increasing in altitude extends southeasterly from the northwest corner, between Skuhun creek in the north and the Nicola river and the Smith creek in the west and south. Some very fair land is found along Skuhun creek, but will need irrigation for successful cultivation. Other small areas of workable land exist also, but water will be needed on all. Robert Waitshoire (colored) is a squatter on NW. $\frac{1}{4}$ of 36. He has been there for the past 8 or 9 years, but has not made much progress with cultivation. Other squatters are located in the same valley (Skuhun creek), but are very recently located there, having only arrived while examination was going on in that vicinity. In valley of Skuhun creek, that stream should supply irrigation (if carefully applied) for all the lands needing it. For the other areas it will be difficult to obtain an ample supply of water.

SEC. 1, NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, SW. $\frac{1}{4}$; SEC. 12, SE. $\frac{1}{4}$.—Much almost level land which is easily workable, and easy slopes; 3,200 to 3,300 feet above sea; sandy loam soil, parts stony; much is suitable for farming, but needs irrigation; scattered fir and bull pine to 30 inches, clumps of poplar, good growth of pine grass; it will be difficult to get sufficient water to irrigate successfully.

SEC. 1, NW. $\frac{1}{4}$; SECS. 2, 3; SEC. 10, SE. $\frac{1}{4}$; SEC. 11, S. $\frac{1}{2}$; SEC. 12, SW. $\frac{1}{4}$.—A hill with steep broken slopes on all sides, and useless for cultivation except a small strip in west part of sec. 3, which is at present cultivated by the owner of C.G. 566. Side of hill is usually rocky; fir and bull pine on higher slopes to 24 inches and a few to 36 inches, of lumber value; timber thins out on lower slopes and becomes of very poor quality; fair grazing usually.

SEC. 10, W. $\frac{1}{2}$; SEC. 9, E. $\frac{1}{2}$ (FRAC.).—Gently rolling, with northeast and southeast part of W. $\frac{1}{2}$ of sec. 10 steep; 1,600 to 2,200 feet above sea; soil, dry, sandy loam, parts gravelly; with irrigation would be suitable for fruit; thin growth of bull pine and a few fir, poor timber value; rather poor grazing; Smith creek could supply some water, but supply is limited.

SEC. 11, N. $\frac{1}{2}$.—A few acres along north boundary which could be worked; stony loam and a good deal of gravel; altitude 2,675 to 3,220 feet above sea; rest of land on steep slope falling to Smith creek; scattered bull pine and fir to 18 inches; fair grazing.

SEC. 12, N. $\frac{1}{2}$.—About 100 acres of workable slope running through centre, dry, sandy loam needing irrigation, altitude 3,220 to 3,500 feet above sea; balance of land is unfit for cultivation being steep and broken; scattering fir and bull pine to 24 inches good grazing; irrigation is difficult to obtain in sufficient quantity.

SEC. 10, NE. $\frac{1}{4}$; SEC. 13, SEC. 14, N. $\frac{1}{2}$; SEC. 15, N. $\frac{1}{2}$; SE. $\frac{1}{4}$.—Steep slopes, often broken and sometimes rocky falling to south and southeast; no agricultural value; 2,000 to over 4,000 feet in altitude; scattering fir and bull pine to 24 inches, of fair value, some large timber, scrub in parts and some jack pine; fair grazing usually.

SEC. 14, S. $\frac{1}{2}$.—Much workable rolling slope in south central part; 2,675 to 3,400 feet above sea; some level land; sandy loam, stony and gravelly but with irrigation would prove of fair value for cultivation; scattered fir and bull pine, average 18 inches diameter, some trees to 36 inches; fair grazing; irrigation is difficult to obtain.

SEC. 16, SE. $\frac{1}{4}$ (FRAC.).—Workable slope in southwest part; sandy loam with much stone and gravel; 1,700 to 2,200 feet above sea; with irrigation would be suitable for fruit, water is difficult to be obtained; thinly scattering fir and bull pine to 24 inches; fair grazing.

SEC. 15, SW. $\frac{1}{4}$; SEC. 16, N. $\frac{1}{2}$ (FRAC.); SW. $\frac{1}{4}$ (FRAC.); SEC. 17 (FRAC. EAST OF RIVER); SEC. 21, S. $\frac{1}{2}$ (FRAC.); NW. $\frac{1}{4}$; SEC. 20, (FRAC.); SEC. 29, SW. $\frac{1}{4}$; SEC. 30, S. $\frac{1}{2}$ (FRAC.).—Steep broken slopes, often rocky, rising to ridge between Skuhun creek and the Nicola river; no possible value for cultivation; bull pine and fir rather thinly scattered and usually of poor quality; some open areas; grazing is poor but has small value.

SEC. 21, NE. $\frac{1}{4}$; SEC. 22, NW. $\frac{1}{4}$, S. $\frac{1}{2}$.—On ridge between Skuhun creek and the Nicola river; rolling slopes becoming broken and useless toward the west; parts workable; sandy loam; owing to the practical impossibility of irrigating, is useless for farm land; altitude rises to 3,900 feet, but greater part is below this; bull pine and fir to 24 inches diameter, of likely lumber value, some scrub; poor to fair grazing.

SEC. 22, NE. $\frac{1}{4}$; SEC. 23, NW. $\frac{1}{4}$.—Steep and broken; rising to over 4,000 feet in altitude; much brûlé covered with small willow and poplar scrub, fir and bull pine to 24 inches diameter in parts, but of little value, some jack pine and windfall; some pine grass grazing.

SEC. 23, S. $\frac{1}{2}$, NE. $\frac{1}{4}$; SECS. 24, 25; SEC. 26, S. $\frac{1}{2}$; SEC. 36, E. $\frac{1}{2}$.—A hilly, broken area with many precipitous slopes, and rising to 4,500 feet in altitude; no possible value for cultivation; entire area has a fair amount of fir and some bull pine on lower slopes, diameter reaches 3 feet in some cases; on higher slopes fir becomes very thinly scattered and there is much jack pine, scrub poplar and willows, and windfalls are common; grazing is poor to fair.

SEC. 27, S. $\frac{1}{2}$; SEC. 28, S. $\frac{1}{2}$; NW. $\frac{1}{4}$; SEC. 29, SE. $\frac{1}{4}$; N. $\frac{1}{2}$; SEC. 32, SW. $\frac{1}{4}$.—Forms part of ridge dividing Skuhun creek and the Nicola river; steep slopes fall to Skuhun creek; no land of agricultural value; 1,900 to 3,700 feet in altitude; fir to 24 inches,

some larger, and bull pine to 24 inches rather frequent, entire area has lumber value scrub in parts; fair grazing usually.

SEC. 26, N. $\frac{1}{2}$.—North part gently rolling slopes; dark, sandy loam and clay loam, stony; rising in steep precipitous slopes to south; 2,550 to 3,700 feet in altitude; good value for farm land; irrigation could be obtained from Skuhun creek; fir and bull pine to 36 inches of good value, much small poplar and willows near Skuhun creek; rather poor grazing.

SEC. 27, N. $\frac{1}{2}$; SEC. 28, NE. $\frac{1}{4}$.—Valley of Skuhun creek; much good workable land along creek; steep slopes, precipitous, rise to south within a few chains of creek; 2,300 to 3,700 feet above sea; soil in bottom is a sandy loam, which can be irrigated from creek; fair farming value; much fir and bull pine to 24 inches and larger, some jack pine and scrub, timber is of lumber value; fair grazing.

SEC. 30, (FRAC.); SEC. 31, (FRAC.).—Rough, broken slopes, often steep and rocky; some scattering fir and bull pine, but usually much open; rather poor grazing.

SEC. 32, NE. $\frac{1}{4}$, AND FRAC. E. OF I. R.—Very stony slopes, but workable; dry, sandy loam, needs water, Skuhun creek a source; 2,100 to about 2,400 feet above sea; bull pine and fir to 24 inches, of good value; poor grazing.

SE. $\frac{1}{4}$.—North of Skuhun creek slope is workable; 2,100 to 2,285 feet above sea; south of creek steep slopes rise; workable area has sandy loam soil, very dry, needing irrigation; fir and bull pine to 30 inches, of fair value, some large cottonwoods along creek; poor grazing.

SEC. 33, NW. $\frac{1}{4}$.—Stony, workable slopes rising in steep, broken slopes to the northeast; altitude 2,285 to 2,405 feet on workable land; some rocky knolls; dry sandy loam soil, needing irrigation; fir and bull pine to 24 inches, of fair value; poor grazing.

S. $\frac{1}{2}$.—Nearly all workable slope falling to Skuhun creek; soil is rather poor, being dry, sandy loam and stony, but with irrigation should prove of fair agricultural value; 2,165 to 2,740 feet above sea; bull pine and fir to 30 inches, of good value. scrub poplar and willow along creek; poor grazing. E. W. Veale was squatting in SE. $\frac{1}{4}$.

SEC. 34, SW. $\frac{1}{4}$.—Small area workable in southwest corner; very stony; altitude 2,330 feet above sea; rest is steep, rocky and broken; fir and bull pine to 30 inches. with some jack pine and scrub; grazing fair.

SEC. 33, NE. $\frac{1}{4}$; SEC. 34, NW. $\frac{1}{4}$, E. $\frac{1}{2}$; SEC. 35, NW. $\frac{1}{4}$.—Broken rocky slopes, very rocky and steep; 2,400 to 3,800 feet above sea; fir and bull pine scattering, rather poor quality but of probable lumber value; very scant grazing.

SEC. 35, SW. $\frac{1}{4}$.—Some workable slope in vicinity of Skuhun creek in southeast corner; rest steep and broken; altitude 2,625 feet and upwards; dry sandy loam, with some black loam along creek bottom; irrigation from creek; bull pine and fir of fair value, some scrub; rather poor grazing.

SEC. 35, E. $\frac{1}{2}$; SEC. 36, W. $\frac{1}{2}$.—Much gently rolling slope in vicinity of Skuhun creek, which is of good value; parts will not require irrigation and some parts will. Water can be obtained from Skuhun creek; much rich loam exists in immediate vicinity of creek, while a sandy loam occupies the higher slopes. In northwest corner of NE. $\frac{1}{4}$ of 35 and SE. part of SW. $\frac{1}{4}$ of 36 steep slopes rise, of no agricultural value; much stone exists throughout; altitude of agricultural land is 2,700 to 3,100 feet above sea; much good fir and bull pine to 24 inches, and some larger, scrub poplar, willow and alder in parts; fair grazing. Robert Waitshoire (coloured) is squatted on NW. $\frac{1}{4}$ of sec. 36; Mr. Currie was squatting on SE. $\frac{1}{4}$ of sec. 35.

A. V. Chase, D.L.S., 1912 (WEST OF THE NICOLA RIVER).—This area is composed chiefly of rough hills which rise almost from the water's edge of the Nicola river, reaching a summit in the southwest corner of the township. A small amount of bench land was found. This part of the township is nearly all timbered land.

SEC. 4 (WEST OF THE RIVER).—Elevation from 1,450 feet upwards. Rises steeply from the banks of the river through rocky slopes. No agricultural value. Some medium-sized fir and pine; grazing scant.

SECS. 5, 6 AND 7.—All rough, mountainous land of no commercial value, timbered with pine and fir of medium size; grazing scant.

SEC. 8.—Elevation from 1,650 feet to 3,600 feet. In the SE. $\frac{1}{4}$ of this section there is a good poplar bench of about 20 acres suitable for dry farming. It is clay loam soil and at an elevation of 3,300 feet above sea. There is very little timber on it with the exception of a few scattered poplar. Adjoining this bench on the south-east is about 20 acres of timbered land that could be worked if cleared. Soil much the same. There is considerable good pine to 24 inches in this locality. Grazing is fair.

SEC. 9 (WEST OF THE RIVER).—Elevation from 1,480 feet to 2,400 feet. The NW. $\frac{1}{4}$ contains a bench of about 14 acres bordering on the river; good agricultural land, the soil being sandy loam with a few stones showing. It is timbered with scrub fir. The remainder of this section is rough and mountainous rising to the west from the Nicola river. The timber is rather small bull pine and fir. Grazing is only fair.

SEC. 16 (WEST OF THE NICOLA RIVER).—Elevation from 1,350 to 1,500 feet. There is an area of about 20 acres of agricultural land here. It is part bench land and part bottom land. Although the land is shown vacant there are several substantial buildings on the place and about 8 acres are under cultivation. The land is sandy loam soil and is partly timbered with scrub fir. The lower part is irrigated from the Nicola river.

SECS. 17 AND 18 (WEST OF THE NICOLA RIVER).—Rise to the west from the Nicola river at about 1,350 feet to over 3,000 feet above sea at the west boundary of the township. This area is hilly and rough and is timbered throughout with bull pine and fir of rather small size, with scattered areas up to 24 inches. Fair grazing.

Tp. 16, R. 23, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

This township is of mountainous character having three high knolls. Spaist Mountain has its summit in northeast part, while a lower knoll rises to the west of this and Skwilkwakwil Mountain to the south. Rocky slopes extend from these mountains, often steep and broken. In the south part of the township deep, rocky ravines occur and slopes are very steep, rising quickly to over 4,000 feet. The only workable land outside of lands disposed of occurs in sections 1, 12, and 7, and only one quarter section in this area is of probable farm value. Many streams have their respective sources in this township and the area supplies water to creeks flowing in all directions, some of which have a strong flow. Grazing is poor to good on the greater portion. Sections 15, 16, 21, 22, 28, 27, 33 and 34 have some pine grass, but grazing is of doubtful value. Sections 25, 35, and 36 have very scant grazing. The balance of the township has fair pine grass with some bunch grass on the south slopes.

SEC. 1, NE. $\frac{1}{4}$.—Rolling slopes from each side to creek through centre, some of slopes steep; fair area workable, dry sandy loam, often gravelly and some black loam along creek; 3,100 to 3,725 feet above sea; fair farm value with irrigation; much good bull pine and fir to 24 inches, some larger, scrub poplar; fair pine grass.

SEC. 1, W. $\frac{1}{2}$; SECS. 2, 3, 4; SEC. 5, (FRAC.).—Broken slopes often steep and rocky and of no value agriculturally; 2,100 to over 4,000 feet in altitude; fair growth of fir and bull pine on lower slopes, with a good deal of jack pine higher up; fair grazing.

SEC. 6, (FRAC.).—Parts on either side I. R. 13; steep slopes towards creek on reserve; rather thinly timbered with fir and bull pine, some scrub; no agricultural value; fair grazing.

SEC. 12.—Steep slopes, often rolling and broken, falling to creek in central part; workable land is too high for value; 3,300 to over 4,000 feet above sea; dry sandy gravelly loam; much good fir and bull pine with a good deal of scrub, jack pine and windfalls on higher slopes; fair grazing, pine grass.

SEC. 7 (FRAC.); SECS. 8, 17; SEC. 18 (FRAC.).—Broken by steep slopes to the ravines of creeks flowing southerly; south $\frac{1}{2}$ of the ravines has a few areas of land

near creek which could be cultivated, but they are too small to be of value; rest is broken and steep; 2,475 to over 4,000 feet above sea; fair amount of bull pine and fir to 30 inches, scrub and jack pine; usually fair grazing.

SECS. 9, 10, 11, 13; SEC. 19 (FRAC.).—Predominant growth is jack pine, but fir is found scattering, much windfall and scrub.

SECS. 14, 15, 16, 20, 21, 22, 23, 24, 25 to 36.—Usually a dense forest of jack pine from scrub size to 14 inches, with much windfall, some spruce in places; mountains with much bare rock showing.

Tp. 17, R. 23, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

North of Calling lake surface is high and rolling running over 5,000 feet in altitude. South of Calling lake the surface is much broken by rocky hills, some of which are bare rock. The entire area is high and the site of an old-time brûlé. Generally a growth of small jack pine covers the area, and in some parts recent burn has run through. Isolated areas of jack pine and some spruce to 15 inches occur which seem to have escaped the old burn. Scrub and windfalls are thick in many parts. SECS. 35 and 36 have some fir to 24 inches diameter and of probable lumber value. Small creeks and muskegs are numerous, and there are a number of small sloughs. Many mineral claims have been staked in the township. Pine grass grows in from poor to fair quantity, but is hardly of grazing value owing to the windfalls giving stock difficulty in getting through. There is a fair growth of grass in the southwest corner. A small area of grass marsh exists at the southeast end of Calling lake. There is only a small area below 4,000 feet. This is in the northeast corner.

SEC. 36, NW. $\frac{1}{4}$.—Broken, rocky rise to southwest; altitude 3,955 to 4,300 feet above sea; a little meadow in northeast corner; dry sandy loam; poor grazing; much jack pine, some scrub and windfalls, a few fir to 30 inches.

SEC. 36, NE. $\frac{1}{4}$ (FRAC.).—Fairly workable; some grass marsh; 3,925 to 4,125 feet above sea; poor grazing; jack pine, with some scrub and windfalls.

SEC. 36, SE. $\frac{1}{4}$ (FRAC.).—Rather rough and hilly; a good deal of muskeg; sandy loam, unfertile; 3,945 to 4,260 feet above sea; jack pine and scrub, some fir to 30 inches, some windfalls; poor grazing.

Tp. 18, R. 23, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

Pukaist creek, flowing from southeast to northwest, divides the township into two parts. The northeast part is mountainous in character, while the southwest part is high and more of a rolling character. The lowest point is on the west boundary at the intersection of Pukaist creek, and is 3,585 feet above sea level. A rolling valley follows Pukaist creek. None of the settlers were home at the time this township was examined except Mr. Chataway, who has homesteaded the SW. $\frac{1}{4}$ of sec. 1. From information gathered, all lands have been taken up for the grass in the marshes, and grains will not mature. Frosts are common through the summer. A good road follows the creek and connects the township with Ashcroft.

SEC. 1, SE. $\frac{1}{4}$ (FRAC.).—Workable land, parts broken, some meadow; stony, sandy loam; 3,925 to 3,980 feet above sea; no agricultural value; jack pine to 16 inches and a few fir to 30 inches; poor grazing.

NE. $\frac{1}{4}$.—Some easy slopes; sandy loam, much rock, stony; 3,920 to over 4,000 feet above sea; no farm value; jack pine to 16 inches and some fir to 30 inches; poor grazing.

NW. $\frac{1}{4}$.—Mostly workable slopes, irregular, parts broken and stony; sandy loam; 3,890 to 4,130 feet above sea; doubtful farm value; jack pine to 15 inches, but usually smaller; poor grazing.

SEC. 2, W. $\frac{1}{2}$, SE. $\frac{1}{4}$; SECS. 3, 4, 5, 6, 7, 8, 9, 10; SEC. 15, SW. $\frac{1}{4}$; SECS. 16, 17, 18, 19; SEC. 20, S. $\frac{1}{2}$.—With the exception of a few small patches on northeast, the entire area is over 4,000 feet in altitude, and runs to over 5,000 feet above sea level; rises

in rolling and broken slopes from the valley of Pukaist creek; often rocky and steep; thickly timbered with jack pine, reaching 15 inches diameter in places, large areas of scrubby jack pine, small willow, poplar and alder scrub in parts, and a few spruce around muskegs, windfalls usually thick, occasional fir to 24 inches and larger are seen and become quite frequent in secs. 17, 18, 19 and S. $\frac{1}{2}$ of 20, where numbers indicate lumber value; some tall, straight jack pine grow along a creek through secs. 7 and 8 and in parts of secs. 15, 16 and 19, diameter is 16 inches; evidence of old burn is seen in many places; fine grass grows in poor to fair quantity and has some value as pasture.

SEC. 2, NE. $\frac{1}{4}$; SEC. 11, SE. $\frac{1}{4}$ (FRAC.).—Part workable; rolling; southwest part rough and stony; sandy loam; 3,890 to over 4,000 feet above sea; doubtful farm value; jack pine to 15 inches, some fir to 36 inches, windfalls; fair grazing.

SEC. 11, W. $\frac{1}{2}$ (FRAC.).—Rather rough slopes, parts workable; 3,840 to 4,235 feet in altitude; doubtful value; sandy loam, stony; jack pine to 10 inches, scattering fir to 30 inches; fair grazing.

SEC. 12, SW. $\frac{1}{4}$.—Rolling slopes generally rough and stony, boulders; parts workable in W. $\frac{1}{2}$; clay and sandy loam; 3,890 to over 4,000 feet above sea; much jack pine, scattering fir to 36 inches of likely value; poor to fair grazing.

SEC. 12, E. $\frac{1}{2}$ AND NW. $\frac{1}{4}$; SEC. 13; SEC. 14, E. $\frac{1}{2}$; SECS. 23, 24, 25, 26, 35, 36; SEC. 22, NE. $\frac{1}{4}$.—Land in this area has a general rise to the northeast and in north and east parts breaks into high rocky knolls, barren in places; altitude from 3,870 to over 6,000 feet above sea; no possible agricultural land on the lower slopes; a number small muskegs and sloughs exist and several small creeks tributary to Pukaist creek; the surface is generally broken and steep and often very rocky; fir from 20 to 36 inches diameter, and sometimes larger are quite frequent in secs. 12, 13, 14, E. $\frac{1}{2}$, 22 NE. $\frac{1}{4}$, 23 and southwest part of 26, and seem to be of lumber value, there is much jack pine, poplar and willows through the fir, and windfalls frequent; the rest of the area is mainly jack pine sometimes reaching 16 inches, but usually not over 10 inches and stunted on higher slopes, some spruce to 15 and 20 inches, the S. $\frac{1}{2}$ of sec. 25 and N. $\frac{1}{2}$ of 24 have much open windfall, much evidence of old burn; pine grass grows in poor to fair quantity, giving grazing rather poor value.

SEC. 14 W. $\frac{1}{2}$ (FRAC.).—A good deal of workable land, rolling, parts broken; sandy loam, some dark loam, stony; 3,800 to over 4,000 feet above sea; doubtful value; small fir, poplar, and jack pine with scattering fir to 36 inches of likely value; fair grazing.

SEC. 15, SE. $\frac{1}{4}$.—Broken rocky slopes with east part rolling and workable; light sandy loam, some dark loam; 3,800 to 4,255 feet above sea; a few fir to 30 inches, jack pine, small scrub and windfalls; fair grazing.

NW. $\frac{1}{4}$.—Rough broken rock slopes; some workable in northeast part; sandy loam; 3,800 to over 4,000 feet above sea; doubtful value; scattering fir to 36 inches in small scrub and jack pine to 15 inches, windfalls; poor grazing.

SEC. 20, N. $\frac{1}{2}$.—Parts workable but of doubtful value; 3,730 to over 4,000 feet above sea; sandy loam; very stony; small jack pine and poplar; fair grazing.

SEC. 21, NE. $\frac{1}{4}$.—Gradual workable slope of doubtful value; sandy loam; northeast part stony and rocky; 3,750 to 4,155 feet above sea; jack pine to 15 inches, fir to 30 inches in northeast part; fair grazing.

NW. $\frac{1}{4}$.—South part badly broken by steep rocky slopes; rest, gradual slopes on either side of Pukaist creek; sandy loam, parts stony; small jack pine and a few fir; poor to fair grazing.

SEC. 22, SE. $\frac{1}{4}$ (FRAC.).—Some good meadow in southwest part, rest gradual slopes; 3,800 to 4,190 feet above sea; sandy loam, some dark loam; small jack pine and a few fir; fair grazing.

NW. $\frac{1}{4}$.—Gradual rolling slopes mostly workable; light sandy loam, much stone and gravel; 3,855 to over 4,000 feet above sea; jack pine, poplar, and willows, scattered fir to 24 inches; fair grazing.

SEC. 22, SW. $\frac{1}{4}$ (FRAC.); SEC. 21, S. $\frac{1}{2}$.—Gradual slopes mostly workable, but of doubtful value; light sandy loam; stony; some marsh along Pukaist creek; 3,780 to over 4,000 feet above sea; thick jack pine and much windfall; fair grazing.

SEC. 27; SEC. 28, E. $\frac{1}{2}$ AND NW. $\frac{1}{4}$; SEC. 32, E. $\frac{1}{2}$; SECS. 33, 34.—In timber berth 516; all over 4,000 feet above sea and reaching over 5,000 feet; apparently no timber has been cut on this berth; thickly timbered, a few spruce and willows in muskegs; much jack pine to 10 inches and in north to 15 inches with some windfalls; fir to 24 inches and larger in secs. 32 E. $\frac{1}{2}$, 28 and W. $\frac{1}{2}$ of 27 of good value; some fir scattering in other parts; surface is rolling and broken with steep slopes in parts; cinder hill rises at the southeast corner of sec. 33; fair pine grass.

SEC. 28, SW. $\frac{1}{4}$.—In timber berth 516; gradual slopes of doubtful value; stony sandy loam; 3,815 to over 4,000 feet above sea; jack pine to 14 inches and some good fir of likely value; fair grazing.

SEC. 29, E. $\frac{1}{2}$, NW. $\frac{1}{4}$ (FRAC.).—Some gradual slopes but of doubtful value owing to altitude; some meadow land along creek in SE. $\frac{1}{4}$; sandy loam, very stony; 3,720 to over 4,000 feet above sea; some good fir to 36 inches quite frequent, much jack pine to 12 inches, some scrub; fair grazing; E. $\frac{1}{2}$ of 29 is in timber berth 516.

SW. $\frac{1}{4}$ (S. $\frac{1}{2}$).—Steep and broken; parts workable; no farm value, 3,720 to 4,100 feet above sea; light sandy loam, stony; timber is chiefly small jack pine and poplar; fair grazing.

SEC. 30, NE. $\frac{1}{4}$ (W. $\frac{1}{2}$); NW. $\frac{1}{4}$ (FRAC.), SW. $\frac{1}{4}$ (FRAC.), SE. $\frac{1}{4}$.—Gently rolling slopes usually, and workable, falling to Pukaist creek; some marsh; 3,590 to 4,125 feet above sea; sandy loam of fair value with some black soil, parts stony; of possible farm value but likely for hay only; much poplar and jack pine, some willow scrub and spruce, scattering fir to 30 inches of good value; poor to fair grazing.

SEC. 31, S. $\frac{1}{2}$.—Largely workable slopes of doubtful value, parts stony and rocky; 3,700 to 4,200 feet above sea; sandy loam; jack pine to 14 inches, some spruce, much scrub, fir to 30 inches and larger and of lumber value; fair grazing.

SEC. 31, N. $\frac{1}{2}$; SEC. 32, NW. $\frac{1}{4}$.—Rocky and stony slopes, broken in parts, over 4,000 feet above sea; fir to 3 feet diameter, with scrub and jack pine; rather poor grazing.

SEC. 32, SW. $\frac{1}{4}$.—Gradual slopes, stony and rocky; sandy loam; 3,830 to over 4,200 feet above sea; good value in fir to 3½ feet diameter, jack pine and scrub; fair grazing.

Tp. 19, R. 23, W. 6th Mer. *A. V. Chase, D.L.S., 1910.*

None of this township lies below 4,000 feet above the sea. It is mostly taken up by two large hills. Glossy mountain in the northwest part and another large hill in the southeast part, both reaching an elevation of over 6,000 feet above sea.

The greater part of this township has apparently been burnt over at one time, and although at present it is all more or less timbered, no timber of commercial value exists. Ranges of small jack pine to 10 inches diameter, some few spruce in marshes in southwest part, and some poplar brush forms the growth. A few open places are seen, but the rocky nature of the soil prevents grazing value.

Tp. 19 and 20, R. 23, W. 6th Mer. *A. V. Chase, D.L.S., 1910.*

Township 19, range 23, is composed entirely of lands over 4,000 feet above sea-level. Glossy mountain rises to a height of over 6,000 feet and the lowest elevation recorded is about 4,200 feet above sea-level, at the northeast corner. No timber of value occurs herein, a small area of jack pine with small spruce and poplar being the predominant growth. In the northeast part is considerable old burn with a few scattered large fir among young poplar and jack pine scrub. Grazing is usually poor. Lands fronting on Thompson river to the south and east of Ashcroft are of a very dry nature. The intense heat in the summer months compels settlers in this region to rely altogether on irrigation for successful cultivation. Almost without exception

the land is intensely dry, being composed of a sandy loam soil, parts containing much alkali. On the lower bench lands little vegetation of any kind except sage brush appears. Some grasses and brush also grow in depressions where sufficient moisture collects in the spring to start growth. Very successful cultivation of all kinds of fruit and vegetables is carried on in the lower altitudes, with vegetables successful as high as 2,500 feet above sea-level. The water in this region is very limited, that from Barnes creek (held in reserve in Barnes lake) being the principal supply. There are already records of this supply exceeding its capacity but some potato crops failed to mature this season because of insufficient water incident to an illegal drain on Barnes creek made by a company holding lands in the vicinity of Pennys. Although a large area of the land in this locality (Ashcroft) is of a workable and fertile nature, there appears to be no profitable way of bringing water to it for irrigation purposes. A crop of oats was attempted by a settler on the southeast quarter of section 23, township 20, range 24, but failed utterly on account of insufficient water supply. A similar state of affairs exists in the lands fronting on Thompson river between Ashcroft and Savona. A great deal of gently rolling and flat land is found here, which is rendered useless agriculturally through lack of water for irrigation purposes. A homestead in the northeast quarter of section 27, township 20, range 25, was found apparently abandoned after considerable improvements had been made and cultivation attempted. The extreme dryness of this district is shown by the fact that on only seven days during June and July was there any appreciable rain and on only five other days was the weather showery. After the month of June frost was not experienced, except at high altitudes unsuited to cultivation, until the month of September, while the heat in the middle of the day was as a rule excessive.

Tp. 20, R. 23, W. 6th Mer. *A. V. Chase, D.L.S., 1910.*

A considerable portion of the southern part of this township is useless, being similar to the lands on Glossy mountain—high, rolling, rocky, covered with small timber and brush of all kinds, too thick to permit grazing value. Sections 1 to 6, 9 and 10 are more or less of this kind. Timber of value is found in the remaining sections south of Barnes creek, and consists mostly of fir, spruce, bull pine and jack pine. Considerable timber value is found also in the east $\frac{1}{2}$ of the township and to the north of Barnes creek, with the exception of some open slopes along the creek valley and sections 27 and 34 to 36.

The northwest part holds mostly rolling, rocky land. The timber is scattered and consists usually of bull pine, with some scattered fir and spruce. There is little land of agricultural value in this township. A homestead on section 27 appears to have been abandoned after extensive improvements had been made and cultivation carried on, lack of water probably being the cause. There is no source of irrigation for lands in this township, with the exception of Barnes creek and a small lake in section 14. These sources are already drawn on to their capacity, and lack of water puts cultivation out of the question.

SEC. 1.—From 4,130 to 4,250 feet above sea; of no agricultural value; no value in south $\frac{1}{2}$ except few fir to 20 inches found along creek bottom; no grazing; north $\frac{1}{2}$ (undisposed of part) rolling, sandy land, covered with small jack pine and poplar, old burn and deadwood; no agricultural value; poor grazing.

SEC. 2.—From 4,030 to 4,320 feet above sea and higher; no agricultural value; S. $\frac{1}{2}$ all rolling, rocky land; some small spruce and fir, poplar, etc., no lumber value; poor grazing; north $\frac{1}{2}$ very similar, covered with thick undergrowth, poor grazing.

SECS. 3, 4, 5, 6.—This area is all over 4,000 feet in altitude and much of it over 4,500 feet; covered with small timber of all kinds and dense underbrush; no grazing.

SEC. 7.—Nearly all over 4,000 feet above sea; no agricultural value; south $\frac{1}{2}$ not of much value, thick growth of small jack pine, poor grazing; north $\frac{1}{2}$ possible value in fir and spruce to 20 inches, fair grazing, much rock with some open patches in westerly part.

SEC. 8.—All over 4,000 feet above sea; no agricultural value; south $\frac{1}{2}$ covered with small growth, no timber value, poor grazing, north $\frac{1}{2}$ fir to 18 inches, bull pine to 24 inches, and spruce to 15 inches, of doubtful value especially in northeast $\frac{1}{4}$, fair grazing.

SEC. 9.—Nearly all over 4,000 feet above sea, 3,850 at northeast corner; steep, rocky and useless; timbered with mixture of small growth.

SEC. 10.—(NE. $\frac{1}{4}$ disposed of).—NW. $\frac{1}{4}$ from 3,830 to 4,000 feet above sea, remainder nearly all over 4,000 feet; no agricultural value; S. $\frac{1}{2}$ useless and rocky; timbered with mixture of small growth; no grazing; NW. $\frac{1}{4}$ a great deal of jack pine on both sides of creek, some open slopes; fair grazing.

SEC. 11.—A small strip along creek bottom below 4,000 feet, remainder above; no agricultural value; that part south of Barnes creek is of little lumber value, with the exception of some fir and spruce along creek bed to 18 inches diameter; part north of creek is rolling land, poor grazing in general, covered with scattered timber, mostly jack pine to 15 and 20 inches, some fir to 36 inches, few spruce to 18 inches.

SEC. 12.—All over 4,000 feet in altitude; no agricultural value; S. $\frac{1}{2}$ has fair grazing, timbered with jack pine of doubtful value; N. $\frac{1}{2}$ has very fair growth of fir to 24 inches; rolling country with steep slopes; poor grazing.

SEC. 13.—Over half is above 4,000 feet in altitude, remainder from 3,830 feet upwards; no agricultural value; rocky in places; a very fair timber section, fir to 36 inches, jack pine to 20 inches; fair grazing.

SEC. 14.—Two-thirds of the area is over 4,000 feet, small portion on north from 3,610 to 4,000; too high for agriculture; south $\frac{1}{2}$ rolling and hilly, scant grazing; fair growth of fir to 36 inches; N. $\frac{1}{2}$ a light loam soil, some open spots, patches of fir to 36 inches and spruce to 12 inches, doubtful lumber value; fair grazing.

SEC. 15.—From 3,780 to 4,170 feet above sea; S. $\frac{1}{2}$ is open, rolling country of no agricultural value, grazing eaten off and burnt out, few patches of jack pine to 20 inches, no timber value; N. $\frac{1}{2}$ is a rolling country, no agricultural value; grazing is fair; some good fir to 36 inches; timber value doubtful.

SEC. 16.—From 3,560 to 4,000 feet above sea; part south of Barnes creek steep and useless for agriculture, mostly timbered land, fir, spruce and bull pine, but of doubtful lumber value; part north of creek contains some fine flats of workable soil, rendered useless for agriculture by altitude and lack of water; fair grazing; fair value in fir to 36 inches, with scattered small jack pine and spruce.

SEC. 17.—From 3,420 to 4,100 feet above sea; land to south of Barnes creek too steep and hilly for agriculture; essentially a timber section, fir, spruce and bull pine to 24 inches, of fair value; fair grazing; some flats in NE. $\frac{1}{4}$ north of creek are rendered useless for agriculture from lack of water, which is all recorded.

SEC. 18.—From 3,130 to 4,100 feet above sea; no agricultural value, too steep and rocky; a timber section; value in fir to 20 inches, spruce to 18 inches, and bull pine to 24 inches.

SEC. 19.—(Part not disposed of).—2,900 to 3,520 feet above sea; no agricultural value; steep, rolling and stony; timber value only to south of creek, scattered timber only, fir to 20 inches; to north grazing is poor.

SEC. 20.—From 3,120 to 3,830 feet above sea; a great deal of high rocky slopes, with very little workable land; fair grazing; open in spots, but on the whole a good timber section, fir to 30 inches, spruce to 15 inches, bull pine to 24 inches.

SEC. 21.—From 3,520 to 3,840 feet above sea; W. $\frac{1}{2}$ has no agricultural value; fair grazing; possible lumber value in fir and bull pine to 20 inches; in the E. $\frac{1}{2}$, the north part is only fit for grazing, but is well timbered with fir to 20 inches and some spruce; the south part contains some flats of doubtful agricultural value, owing to altitude and lack of water; fair scattered growth of fir to 30 inches, jack pine to 24 inches; fair grazing.

SEC. 22.—From 3,400 to 3,940 feet above sea; NW. $\frac{1}{4}$ has light loam soil, workable but of doubtful agricultural value without abundance of water; fairly level,

covered with fir to 24 inches, and much small brush, probable timber value; in SW. $\frac{1}{4}$ the soil is the same, altitude too high for agriculture; grazing fair; fair scattered fir to 36 inches, and some jack pine, hardly commercial value in timber; E. $\frac{1}{2}$, land workable in general, sandy loam soil, only possibility of agricultural value is in NE. $\frac{1}{4}$, where altitude is lowest; fair grazing, and scattering timber in fir to 18 inches in north part, and small growth to south.

SEC. 23.—From 3,220 to 4,000 feet above sea level; with the exception of the NE. $\frac{1}{4}$, all is workable, but of doubtful agricultural value on account of altitude and rolling nature of ground; timber is of fair value in W. $\frac{1}{2}$ in fir to 36 inches, but runs into small stuff in E. $\frac{1}{2}$, with some small spruce; grazing fair in general.

SEC. 24.—From 3,000 to 4,000 feet above sea; rolling land with only small patches workable; some steep slopes with parts stony; very fair value in fir to 20 and 30 inches is found, best being in the southeast; also thick growth of small fir and jack pine in places; fair grazing.

SEC. 25.—From 3,000 to 3,220 feet above sea, north $\frac{1}{2}$ is of no value, greater part taken up by lakes, remainder by steep rock slopes. South $\frac{1}{2}$ is rocky and rolling, and of no agricultural value; timbered with scattered fir and spruce; poor grazing.

SEC. 26.—From 3,000 to 3,630 feet above sea; only workable part in this section is south $\frac{1}{2}$ of southwest $\frac{1}{4}$, which is of doubtful value on account of its altitude; soil is sandy loam; remainder is fit only for grazing; timbered with fir to 30 inches, of probable value in west $\frac{1}{2}$. Fir to 18 inches and some bull pine of doubtful value in east $\frac{1}{2}$.

SEC. 27, NE. $\frac{1}{4}$; SW. $\frac{1}{4}$.—From 2,975 to 3,520 feet above sea. Northeast $\frac{1}{4}$ is of no agricultural value, rocky; scant grazing; scattered fir to 20 inches. Southwest $\frac{1}{4}$ steep slopes with some flat benches of sandy loam, doubtful agricultural value; fir to 30 inches of probable value; fair grazing.

SEC. 28.—From 2,970 to 3,630 feet above sea; rolling stony land of no agricultural value; fair grazing throughout; possible lumber value, mostly bull pine to 20 inches, a few fir to 30 inches in east $\frac{1}{2}$.

SEC. 29.—From 2,980 to 3,600 feet above sea; some good workable flats in the centre of this section; soil rather alkaline in spots, remainder sandy loam; needs water for agricultural value; grazing fair in general; rather poor timber section in scattered fir and bull pine.

SEC. 30, all but S. $\frac{1}{2}$ of SW. $\frac{1}{4}$.—From 3,050 to 3,440 feet above sea; some small flats fit for cultivation in southeast $\frac{1}{4}$; sandy loam soil, alkaline in places; of no value without water; remainder steep and rocky, and of no agricultural value; poor grazing; a strip of timber in centre of section of probable value, being bull pine to 20 inches diameter.

SEC. 31.—From 1,500 to 3,400 feet above sea; steep and rocky, no agricultural value. South $\frac{1}{2}$ is covered with clumps of small spruce and scattered fir to 18 inches, no lumber value; fair grazing. North $\frac{1}{2}$ has no timber value, scattered small growth, fir, spruce and bull pine; fair grazing.

SEC. 32; N. $\frac{1}{2}$; SW. $\frac{1}{4}$.—From 2,590 to 3,440 feet above sea. West $\frac{1}{2}$ steep, rocky and broken. No agricultural value; poor grazing; a little scattered timber in southwest $\frac{1}{4}$, bull pine and fir, mostly open in northwest $\frac{1}{4}$. Northeast $\frac{1}{4}$ has no agricultural value; scattered bull pine to 20 inches, of no lumber value; poor grazing.

SEC. 33.—From 2,600 to 2,980 feet above sea; stony and rocky, no agricultural value; poor grazing; very little timber, very scattered jack pine and fir.

SEC. 34.—From 2,850 to 3,080 feet above sea. South $\frac{1}{2}$ is nearly all workable land of light loam and sandy soil, all useless for agriculture without irrigation; mostly open land in southwest $\frac{1}{4}$ but covered with some fir to 30 inches in southeast $\frac{1}{4}$; grazing scant. North $\frac{1}{2}$ has alkaline flats in northeast $\frac{1}{4}$; probably no agricultural value; remainder is a rock hill covered with scattered bull pine and fir to 20 inches; grazing fair in parts.

SEC. 35.—From 2,500 to 3,500 feet above sea; nearly all rock peaks; some small alkaline flats toward southeast corner; no agricultural value; bull pine and jack pine

to 20 inches, with some fir to 30 inches, in extreme south; possible timber value; poor grazing.

SEC. 36.—From 2,180 to 3,500 feet above sea; high rock peaks in south part with steep slopes to north; no agricultural value; some bull pine and jack pine to 20 inches in south part, of doubtful value; north $\frac{1}{2}$ is mostly open; poor grazing.

Tp. 21, R. 23, W. 6th Mer. (South of the Thompson river.) *A. V. Chase, D.L.S., 1910.*

This area is composed almost entirely of steep, broken and rolling slopes, coming down to the level of the river to the north. No flat benches of any area were found in the undisposed of parts. Such small flats as were found among the hills are too small for cultivation, and useless without irrigation, of which there is no possibility. Except on the extreme south, all this is open land fit only for grazing. Timber is scattered, and in general of no lumber value.

SEC. 1.—From about 1,200 to 2,500 feet above sea; precipitous cliffs, sloping to northeast; only small patches of flat here and there which are workable; no value without water; no timber, very little scrub; poor grazing.

SEC. 2.—From about 1,600 to 3,160 feet above sea. S. $\frac{1}{2}$ high rock slopes; scattering bull pine to 18 inches; scant grazing; N. $\frac{1}{2}$ open, steep, rolling slopes, with rock outcrops; fair grazing.

SEC. 3.—From 2,420 to 3,060 feet above sea level; S. $\frac{1}{2}$ has scattered bull pine and jack pine to 30 inches, some fir to 18 inches; poor grazing; N. $\frac{1}{2}$ rolling and steep rock slopes; timber running out to north; poor grazing.

SEC. 4.—From 1,290 to 2,600 feet above sea; very rough, stony land, of no value; poor grazing; scattered timber in S. $\frac{1}{2}$, bull pine, jack pine and fir to 18 inches.

SEC. 5.—From river level to 2,600 feet above sea; mostly steep rock slopes of no value, very rough and stony; poor grazing; fir to 18 inches frequent on extreme south of section.

SEC. 6 (FRAC.).—From river level to 2,590 feet above sea; on the whole very rough, with rocky cut banks; a small bench near river of good flat land, needing water for any value; remainder fit only for grazing, which at present is dried out and poor; open land.

SEC. 9, S. $\frac{1}{2}$ (FRAC.).—From river level to about 1,700 feet above sea; rolling, broken land; only poor grazing.

SEC. 10.—From 1,170 to 2,420 feet above sea; S. $\frac{1}{2}$ steep slopes; clumps of timber of no value; stony and rocky; poor grazing. N. $\frac{1}{2}$ open, broken land, with steep cliffs.

SEC. 11 (FRAC.); SEC. 12.—From river level to 2,420 feet above sea; some small flats of sandy loam, among steep slopes, no value without water; too broken for agricultural value; no timber; poor grazing.

A. V. Chase, D.L.S., 1911 (PORTION NORTH OF THE THOMPSON RIVER).—This area is traversed from north to south by the valley of Eight-mile creek, with steeply rolling hills rising to the east and west. With the exception of some small flats of slightly alkaline soil in Eight-mile creek valley near the north boundary of the township and some workable land in the NW. $\frac{1}{4}$ little land of any agricultural value is found therein.

The west part of the township is chiefly rolling hills, very rough and only sparsely timbered, while the east part rises to an elevation of over 4,500 feet above the sea level in the northeast corner of the township.

The easterly part is more or less timbered on the heights, but except in the north part of the township the timber is rather small and stunted. There is much solid rock in evidence throughout.

SOUTHWEST PART, COMPRISED OF PARTS OF SECS. 6, 7, AND 8.—An area rising from the Thompson river to a summit in section 17 to somewhat over 2,000 feet. Very

steep and rocky, with perpendicular bluffs. Little or no timber. Grazing rather poor and burnt off.

SECS. 13 AND 14 (UNDISPOSED OF PARTS).—Elevation from 1,300 to about 2,300 feet above the sea. Rising steeply to the north. Is particularly rough and rocky. Very little value. Scattered, stunted timber and poor grazing.

SECS. 17 AND 18 (NORTH PARTS).—Elevation from 1,500 to 2,300 feet and over above the sea. Rising to the north at first gently then steeply through rough broken land of no agricultural value. There is no source of irrigation for any workable areas herein, all the available water being used at present. Little or no timber. Poor to scant grazing.

SECS. 19 AND 20.—Elevation from 1,800 feet to about 3,000 feet above the sea. Steeply rising, rough, broken land with many gulches and outcrops of solid rock. Few scattered bull pine in the north part. Scant grazing.

SEC. 21.—Elevation from 1,500 to 3,000 feet and over above the sea. Almost all open land. A few scattered bull pine in the north part. Rolling and precipitous with outcrops of solid rock. There are some gentler slopes in the south part but not of agricultural value. The grazing is burnt off.

SECS. 22, 23 AND 24.—Elevation from about 1,500 feet in the south part of 22 to 3,500 feet in the northeast part of 24.

Very little land of any possible agricultural value herein even with irrigation, the land being disposed of almost to the base of the steeply rising hills and such small flats as are existent in the southwesterly part of this area are too small to be of any value by themselves. The land rises steeply to the north and northeast through very rough, rocky land, rather open in the south part, but covered with a scattered growth of fir to 20 inches in the north part. Of no commercial value. The grazing is all dried out.

SEC. 25.—Elevation from 3,500 to 4,000 feet and over above the sea. A long area stretching southward, rocky and rough. Stunted 16-inch fir. No grazing.

SEC. 26.—Elevation from 3,000 to 4,000 feet above the sea. Fairly flat in the north three-quarters, the south part terminating abruptly in precipices and steep slopes. The north part contains some fairly good fir to 30 inches with some scattered bull pine. The remainder is fairly well covered with stunted fir. Scant grazing and no agricultural value.

SEC. 27.—Elevation from 2,500 to 3,500 feet above the sea. It is cut by gulches. No agricultural value. Steep slopes. Timber is a fair growth of stunted fir. Grazing is poor in general, scant in the south part.

SEC. 28.—Elevation from 2,400 to 3,000 feet above the sea. It is traversed by the Eight-mile creek from north to south. No agricultural value. Brush in creek gulch with fairly open land near creek. Poor grazing. Scattered fir and bull pine in east and west of the section.

SECS. 29 AND 30.—Elevation from 2,500 to 3,000 feet and over, above the sea. High timbered hills of no agricultural value. Mostly small fir and bull pine to 18 inches and 20 inches. Doubtful merchantable value. Rather poor grazing in general especially on the southeast slopes.

SECS. 31 AND 32 (UNDISPOSED OF PART).—Elevation, from 2,450 to 3,000 feet and over, above the sea. With the exception of a small flat west of Tsotin lake this area is of value only for grazing. There is an area of probably 20 acres of workable land needing irrigation in sec. 31. Apparently there is no available water for this area as a ditch has been made through it to Tsotin lake which was quite dry in early summer. Timber is scattered fir and bull pine of small size. There is much rock outcrop on hills with rather fair grazing on the north slopes.

SEC. 33.—Elevation, from 2,300 to 3,000 feet above the sea. Some small flats slightly alkaline, in the north part. Of no agricultural value, without irrigation. Available water all in use. The remainder is steep gulches timbered with small bull pine and fir; poor grazing.

SEC. 34.—Elevation, from 2,700 to 3,500 feet, above the sea. It is rough and cut up by slopes and gulches. No agricultural value. Fair growth of fir to 24 inches with some bull pine to 24 inches; poor grazing.

SEC. 35.—Elevation, from 2,800 to 4,000 feet and over, above the sea. Very steep land; no agricultural value; a very fair growth of fir to 24 inches throughout with a few bull pine to 24 inches; grazing is parched out.

SEC. 36.—Nearly all over 4,000 feet above the sea level. The east half is nearly all covered with small jack pine to 10 inches and a few scattered fir to 18 inches. The west half, falling rapidly to the south west is covered with fir to 24 inches increasing in value toward the lower altitudes; the grazing is poor.

Tp. 22, R. 23, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

Somewhat over two-thirds of the area of this township is over 4,000 feet above the sea level and except through a narrow valley in the south part is all more or less of a rolling precipitous nature. There is little value of any kind as the timber is composed almost altogether of small jack pine, above the 4,000 feet level and much of the timber on the lower slopes is stunted on account of the amount of solid rock. In the valley (Pass valley) is some fair sized fir and bull pine, considerable of which however has been cut. Grazing is rather poor through this township.

SEC. 1.—Elevation, from 2,700 to 4,000 feet and over, above the sea. The land rises rapidly to the southeast to stony ridges at the southeast end. There is no agricultural land. Timber is composed of a fair quality of fir to 24 inches in the north and northwest part, which decreases in size and quality toward the southeast, running into small jack pine in the southeast corner; grazing is poor.

SEC. 2.—Elevation, from 2,670 to 4,000 feet and over, above the sea. This section is traversed by a valley whose bottom land is from 10 to 20 chains wide. Some small areas of this land are workable but it is mostly rocky and rather rolling. Lack of water supply makes profitable irrigation impossible. The fir in this valley might be of some value for small portable mill cut. The grazing is fair on slopes.

SEC. 3.—Elevation, from 2,670 to 4,000 feet and over, above the sea. The land rises steeply to the north through very rough country. A few acres of flat land in the southwest quarter but no source of irrigation. The remainder is of no agricultural value. There is scattered bull pine in the lower levels with better quality of timber higher up. Doubtful merchantable value; much solid rock outcrop.

SEC. 4.—Elevation from 2,500 to 2,800 feet and over above the sea; steeply rolling; no agricultural value; rocky and rough land; fir to 30 inches with jack pine. The grazing is fair.

SEC. 5.—Elevation from 2,500 to 3,540 feet and over above the sea. The land rises at first gradually then steeply to the north. There is no agricultural value, the land being very rough. The timber is mostly of jack pine but of no merchantable value. The grazing is fair.

SEC. 6.—Elevation from 2,720 to 3,600 feet and over above the sea. There is a small area of gently sloping land in the southwest part of possible agricultural value, with water. The timber on this section is mostly jack pine and of no merchantable value. The grazing is fair.

SEC. 7.—Elevation from 3,600 to 4,000 feet and over above the sea; there is a general slope rising to the north. No agricultural value. There is considerable fir from 20 inches to 30 inches, particularly in the north half. The grazing is fair.

SEC. 8.—Elevation from 3,500 to 4,000 feet and over above the sea. The land is steep and rocky and of no agricultural value. Timber is poor in the section. No merchantable value; jack pine and fir. Grazing is poor.

SEC. 9.—Elevation from 3,200 to 4,000 feet and over, above the sea. The land is steeply rolling, rocky, and of no agricultural value. There is fir, scattered with jack pine, in evidence to north. Grazing is fair.

SEC. 10.—Elevation from 3,700 to 4,000 feet and over above the sea; no agricultural value; there is much outcrop of solid rock. The land is no value except for

scattered timber of bull pine, and fir to 24 inches. The grazing is poor on account of the rock outcrop.

SEC. 11.—Elevation from 2,700 to 4,000 feet and over above the sea; no agricultural value. The land rises rapidly toward the northwest. The place is fairly well timbered with fir and bull pine to 20 inches in the southeastern part, but running into jack pine of no value in the northwest. The grazing is rather poor.

SEC. 12.—Elevation from 2,660 to about 3,900 feet above the sea. No agricultural land. Rising steeply from Cultus lake to south and northwest. In the south part there is a good growth of fir to 30 inches, with a considerable number of young trees. In the north part the timber is of smaller size and rather poor value on account of the amount of solid rock present. Grazing is fair to the south of the lake, but rather poor to the north.

SEC. 13.—Elevation from 3,100 to 4,000 feet and over above the sea; rising rapidly to northwest. No agricultural value. A few fir among the jack pine in the southeast part, but mostly jack pine of no value in the northwest part. Grazing is rather poor.

SEC. 14.—Nearly all over 4,000 feet above the sea. There is no merchantable value of any kind in this section. A rough section with gullies and rocks. Timber scattered, and mostly jack pine with a few small fir. Fair grazing of fine grass.

SEC. 15.—Elevation from 3,700 to 4,000 feet and over above the sea. No agricultural or timber value. Rocky, and roughly broken with creek gulch. Small jack pine timber. Poor grazing.

SEC. 16.—Nearly all over 4,000 feet above the sea level; rising steeply to northwest. Rocky and of no value, with small jack pine. Grazing is poor.

SECS. 17 AND 18.—Nearly all over 4,000 feet above the sea level. Rolling, rocky, and steeply rising to north and northeast. A useless area, covered mostly with small jack pine. Grazing is poor.

NORTH HALF OF TOWNSHIP.—All over 4,000 feet above the sea level. A high, rough, rolling and useless area, timbered with small jack pine and some old burnt and fallen timber. Rocky. Rather poor grazing.

Tp. 23, R. 23, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

This township is all over 4,000 feet above the sea level and consequently of no value agriculturally. Almost all the township with the exception of two valleys, one in secs. 10, 11, 14 and 13 and the other along a branch of George creek, in sec. 23 and 24, is composed of high timbered rolling hills. These valleys particularly in secs. 14 and part 13 contain considerable area of meadow land. This land, however, is at a very high altitude, about 4,300 feet above the sea and is consequently rather poor even for marsh hay. After cutting the yield for a couple of years the yield seems to run out owing to the lack of protection of the old crop. Considerable work by settlers has been done in this part in the past but the buildings have been burned. The valley in sections 23 and 24 contains large meadow which does not appear to have been cut.

The remainder of the township may be described as land useless, except for grazing. A valley runs through from Barricade creek source to a branch of Scottie creek with land rising to the south and north reaching a summit in the north about the north centre of the township. The north part of the township is almost completely all burned with second growth of jack pine, poplar, cottonwood and brush.

No merchantable value of timber is found in this township although scattered fir of small size is found along the south part. The only value of any kind is for grazing. There is considerable good grazing for summer range throughout of pine grass.

Fractional Tp. 24, R. 23, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

The greater part of this township is above 4,500 feet above the sea level. All is over 4,000 feet above the sea, with the exception possibly of some of the gulch of Hihium creek, which is the outlet of Hihium lake.

A high stretch of land of no agricultural value. All timbered land but no lumber value found. Timber is all jack pine running in ranges of thickly growing small stuff particularly in the neighbourhood of Hihium lake. There is a summit in the south centre of this township to the south of Hihium lake rising to well over 5,000 feet above the sea-level. The land is very rolling in general.

Fair grazing is found through most of this part with some small meadow land around the lake and outlet.

Tp. 15, R. 24, W. 6th Mer. (Fractional northeast corner.) *R. D. McCaw, D.L.S., 1910.*

No agricultural land in the township except a small strip in NE. $\frac{1}{4}$ of sec. 34 along the river which could be used for fruit. Rest of surface is rocky, steep, broken slopes, with lower part near Indian reserve almost devoid of timber. Upper parts have fir and bull pine, scattering and usually of fair quality. Scant to fair grazing.

A. V. Chase, D.L.S., 1912.—(WEST OF THE NICOLA RIVER.)—Most of this area is taken up by a large Indian reserve, leaving only rough mountains undisposed of throughout the centre and south part. In the northwest part there is a small valley which contains an area of agricultural land. The undisposed of part of the township is timbered throughout.

SOUTH HALF OF THE TOWNSHIP.—This is all rough timbered hills with steep slopes to the valleys of the different creeks. In the southeast part most of the timber is scrubby fir with scattered bull pine of fair size, but the timber in the southwest part is composed of bull pine and fir of fair quality up to 18 inches. Fair grazing throughout.

NORTHWEST PART OF THE TOWNSHIP.—There is a small valley running from Skeikut Indian Reserve No. 9 northeasterly through sec. 32. Near the centre of the north boundary of sec. 32 this valley widens out into an area of good agricultural land at an area of 2,800 feet above sea. About 20 acres of this area which extends north into township 16, lie in sec. 32. This area is improved and fenced and has been cropped in oats and hay. The remainder of this valley is narrow and the lands rise steeply to south and north. They are all timbered lands and some very good bull pine timber is noted, though much of the more accessible has been cut by Indians. Grazing is only fair.

Tp. 16, R. 24, W. 6th Mer. (East of Nicola river.) *R. D. McCaw, D.L.S., 1910.*

This township is composed of a steep slope rising from the Nicola valley and attaining a high altitude, broken in many parts. There is no land of agricultural value except a small strip along the river and a small area south of Indian Reserve No. 9. Indian Reserve No. 9 is a grazing land for the Indians.

SEC. 1.—Steep slopes, very much broken, falling to east and southwest; very rough and stony, with a good deal of rock; altitude reaches 3,535 feet; no agricultural value; scattered fir to 20 inches and a few larger, bull pine thinly scattered to 30 inches diameter, of questionable lumber value; good grazing.

SEC. 12, S. $\frac{1}{2}$ (FRAC.).—Rolling slopes, steep at east with some workable area in SW. $\frac{1}{4}$; sandy loam, rather stony; 3,100 feet above sea; little value without irrigation; some open patches; scattered fir and bull pine to 24 inches, some larger, clumps of poplar and willow, timber is fair value; good grazing.

SEC. 2; SEC. 3 (FRAC.); SEC. 11 (FRAC.); SEC. 10 (FRAC.); SEC. 14 (FRAC.); SEC. 15 (FRAC.); SEC. 16 (FRAC.) (ALL EAST OF NICOLA RIVER).—Rough, broken, rocky land on upper slopes, falling in steep slopes towards the valley of the Nicola, 1,020 to 3,300 feet above sea. Slopes in immediate vicinity of river have fir and bull pine thinly scattered and of no merchantable value; on upper slopes timber becomes

thicker and of better quality, 24 inches diameter and larger. Much of lower slope is open; grazing scant to fair; along the river in Sec. 3, E. $\frac{1}{2}$; Sec. 10, SE. $\frac{1}{4}$, W. $\frac{1}{2}$; Sec. 15, SW. $\frac{1}{4}$; Sec. 16, NE. $\frac{1}{4}$, is a strip of land in flats and benches at a small altitude above the river level, which if irrigated would be suitable for fruit; soil is a light loam with a gravelly loam subsoil; much is open and parts timbered with cottonwoods and scrub; areas in each quarter are not large.

SEC. 21 (FRAC.); SEC. 22 (FRAC.); SEC. 27 (FRAC. SOUTH OF SMALL CREEK); SEC. 28.—Surface generally too rough, broken or steep to be of agricultural value; parts very rocky; altitude runs to 3,300 feet above sea; all heavily timbered except W. $\frac{1}{2}$ of Sec. 22 and SW. $\frac{1}{4}$ of Sec. 27, and fraction of Secs. 28 and 21, which have thinly scattered fir and bull pine, timber on rest is fir to 18 inches and bull pine to 30 inches, with a few fir of larger diameter; poor to fair grazing; NW. $\frac{1}{4}$ (Frac.) of Sec. 21 has small strip of land along river suitable for fruit.

SEC. 23 (FRAC.); SEC. 26.—Rough and rocky, with steep slope at north; 3,000 to over 4,000 feet above sea; inclined to be hilly; no farm land; scattering fir and a few bull pine to 24 inches, some larger, some jack pine and scrub; fair grazing.

SEC. 24 (FRAC.); SEC. 25.—Rough and hilly; nearly all over 4,000 feet above sea; much jack pine, a few fir of usually small dimension, but in some cases 24 inches and over, of possible value, scrub and some windfalls; fair grazing.

SEC. 28, S. $\frac{1}{2}$ (FRAC.), NW. $\frac{1}{4}$; SEC. 29, NE. $\frac{1}{4}$ (FRAC.); SEC. 32, S. $\frac{1}{2}$ (FRAC.); SEC. 31 NE. $\frac{1}{4}$ (FRAC.) (ALL EAST OF RIVER).—Steep, broken, rocky slopes to Nicola river, with deep ravines; fir and bull pine scattering on higher slope and thinning out lower down, leaving some open slopes near river; no farm land; timber is of poor quality, although sometimes reaching 24 inches diameter; poor grazing; Sec. 28, SW. $\frac{1}{4}$ and Sec. 31, NE. $\frac{1}{4}$, have a narrow strip of land suitable for fruit along the river, areas are probably too small for value, irrigation is needed.

SEC. 28, E. $\frac{1}{2}$ (FRAC. N. OF CREEK); SEC. 27 (FRAC. N. OF CREEK); SEC. 32, NE. $\frac{1}{4}$; SECS. 33, 34; SECS. 35, 36.—Steep and much broken slopes, falling south to creek flowing through secs. 25 to 28; very rocky on lower altitudes, with slides and cliffs, high altitude becomes rolling and hilly, forming a part of the Pimainus hills; altitude rises to much over 4,000 feet; no land of farm value; secs. 35 and 36 have mainly a growth of jack pine with a fair amount of large fir in sec. 35 and SW. $\frac{1}{4}$ of 36, scrub and windfalls, the rest of area has chiefly fir and bull pine to 24 inches of likely value, some scrub; poor to fair grazing.

(WEST OF THE NICOLA RIVER).—A. V. Chase, D.L.S., 1912.—The lands in this area adjoining the Nicola river are chiefly steep broken side hills with very little timber. Some small benches are found along the river at a small elevation above it. In the southwestern part of the township the lands are timbered and steeply rolling and in the north part rough and rocky. Small areas of workable land are seen, but only those of note are described in detail hereinafter.

SEC. 3 (WEST OF THE RIVER).—Rises steeply from the river to the westward through broken sandy loam hills of no agricultural value. Only scattered scrub timber, with some good areas of bunch grass grazing.

SEC. 4.—Chiefly steep side hill rising to the west. Soil is a sandy loam, but too irregular as to outline for agricultural purposes. Scattered pine and fir of medium size. Grazing is fair.

SEC. 5.—Elevation from 2,700 feet to 3,300 feet. The south part contains part of an area of about 20 acres which extends into the township to the south. This is fairly flat land of good sandy loam soil and has been cropped in oats and hay. It is fenced and has a couple of small buildings on it.

There is also some gently rolling land of workable soil along the 3,000-foot contour towards the north part of the sec. which shows possible value in dry culture. There is considerable rock in the north part. The remainder is steeply rolling land with bull pine and fir of small size. Grazing rather poor.

SEC. 6 AND PART OF SEC. 7 NOT IN INDIAN RESERVE.—High rolling lands of use only for grazing. Some scattered pine and fir. Elevation from 2,500 to 3,400 feet.

Through the centre of this section is a narrow strip of flat land about 20 chains wide. This land to the extent of about 80 acres should grow hay. The soil is black loam and is covered with scattered pine and willow. Its elevation is 3,130 feet and should be suitable for dry culture. The land rises to east and west of this strip and is suitable only for grazing. Scattered pine and fir of no merchantable value.

SEC. 9 AND PART OF 10 AND 15 WEST OF THE RIVER.—Elevation from 1,100 feet to 2,500 feet. The lands rise steeply from the river through rolling broken grazing land. Only scattered clumps of timber.

SEC. 16 (WEST OF THE RIVER).—This section contains a small bench of about 5 acres adjoining the Nicola river and about 15 feet above it. It is suitable for fruit, being at an elevation of 1,100 feet above sea. The remainder of the section is fairly open grazing land with scattered clumps of pine and poplar.

SEC. 21 (WEST OF THE RIVER).—Contains about 5 acres of bench along the river and 25 feet above it. The soil is light sandy loam with a few rocks and should be suitable for fruit. The remainder of the section is semi-open rolling land fit for grazing.

SEC. 29 (WEST OF RIVER).—A sage brush bench of about 10 acres was noted here adjoining the Canadian Pacific railway along the river. It is a light sandy loam soil and a trifle rocky, but suitable for fruit. The remainder of the section is steeply rolling and fit only for grazing. Bunch grass is fairly abundant.

The remainder of the undisposed of land west of the Nicola river is valuable only as grazing land. It rises throughout the township steeply to the west and much of the land is so irregular as to be rather difficult of access for stock. There is considerable bunch grass throughout and very little timber is seen east of the west boundary of the township. In the north part, as much of this area is visible from commanding points it was not examined in detail except so far as to be sure no areas of agricultural land of note were unobserved.

Tp. 17, R. 24, W. 6th Mer. *R. D. McCaw, D.L.S., 1910.*

Very little land of possible use for farming exists in this township. Steep slopes rise from the Thompson and Nicola rivers and soon attain a high altitude. Inkikuh creek breaks sec. 36 Pimainus creek divides the township from southeast to northwest with its dip canyon-like ravine flowing through secs. 1, 11, 15, 21, 29 and 30. The Indians in the reserve in the northwest part have all the low land (with small exception) that is of value agriculturally. The entire area is timbered with the exception of some lower slopes near the Thompson and Nicola rivers.

SECS. 1, 2, 3, 10, 11, 12.—High and hilly, forming part of Pimainus hills; all over 4,000 feet in altitude except part of the steep slopes to Pimainus creek; growth is mainly jack pine with fir to 24 inches and some bull pine thinly scattered in parts and generally of good quality, poplar and willow scrub with windfalls common and considerable scrub fir on south slope to creek; much rock exists on steep slopes; following parcels have lumber value, sec. 11, N. $\frac{1}{2}$, sec. 12, W. $\frac{1}{2}$, and westerly parts of secs. 3 and 10; pine grass affords very fair grazing.

SECS. 4, 5, E. $\frac{1}{2}$; SEC. 8, SE. $\frac{1}{4}$; SEC. 9, S. $\frac{1}{2}$.—Steep, rocky or broken and of no agricultural value; altitude runs to over 4,000 feet above sea; a good growth of fir to 24 inches and larger, with a few bull pine gives fair timber value, poplar and willow scrub in parts; grazing usually fair.

SEC. 5, W. $\frac{1}{2}$; SEC. 6, (FRAC. E. OF NICOLA); SEC. 7, W. $\frac{1}{2}$; SEC. 18, W. $\frac{1}{2}$; SEC. 19, W. $\frac{1}{2}$.—Generally steep, rocky slopes rising from Valley of Nicola and Thompson rivers, often precipitous, with broken clay banks in places; fir thins out as it reaches lower slopes and bull pine more frequent, and this becoming small and thinly scattered leaving some of lower slopes open with sage brush, as a whole the timber is poor; poor

to fair grazing; through section 6 a few flats along Nicola river of light loam underlaid with gravelly loam, have value as fruitland but would need irrigation.

SEC. 7, E. $\frac{1}{2}$; SEC. 8, W. $\frac{1}{2}$; SEC. 18, E. $\frac{1}{2}$; SEC. 17, W. $\frac{1}{2}$.—Generally rocky, broken slopes, often steep, falling towards the Thompson river; altitude from 2,500 to 3,200 feet above sea; no agricultural value; dry, sandy loam of very poor quality; much good fir and bull pine to 24 inches, scrub poplar and willows in parts; grazing usually fair.

SEC. 8, N.E. $\frac{1}{4}$; SEC. 9, N. $\frac{1}{2}$; SEC. 17, E. $\frac{1}{2}$; SEC. 16, SW. $\frac{1}{4}$.—Slopes much similar to surrounding country, but there is a great deal of workable land at an altitude of from 3,000 to 3,700 feet; soil is a dry sandy loam which, with irrigation from Pimainus creek, should be productive; altitude causes value to be doubtful; much fir to 24 inches and larger, some bull pine and scrub, timber is good value; fair grazing.

SEC. 16, E. $\frac{1}{2}$, NW. $\frac{1}{4}$; SECS. 15, 22; SEC. 21 (FRAC.).—Steep broken slopes falling to Pimainus creek on both sides, part over 4,000 feet in altitude; no agricultural land; much rock; fir to 24 inches, some larger, also some bull pine, timber is of likely value, also scrub growth in parts; fair grazing usually.

SEC. 19, E. $\frac{1}{2}$; SEC. 20; SECS. 29 AND 30 (FRAC. SOUTH OF I.R.).—Steep, broken slopes falling to Pimainus creek, often rocky and ending in broken clay and gravelly banks in section 30, unless for cultivation; some good fir and bull pine on higher slopes, which thins out lower down and becomes of poor value, scrub in parts; poor to fair grazing.

SECS. 13, 14, 23, 24, 25, 26, 27, 35, 36.—All very high, reaching much over 4,800 feet in altitude, and thickly timbered; many steep slopes and rocky outcrops; sprinklings of fir occur on some higher altitudes, but usual growth is jack pine with much windfall, and some standing dead timber. S. $\frac{1}{2}$ of sec. 14 has a good deal of fir and bull pine to 24 inches, of likely value; brulé appears in some of eastern portions with dense scrub growth, in west part on lower slopes fir becomes quite frequent and in secs. 27 and 35 has likely value; pine grass grows throughout in poor to fair quantity, giving grazing of some value.

SEC. 28 (FRAC.); SEC. 33 (FRAC.); SEC. 34.—Steep, broken, and rolling slopes of no agricultural value, often rocky, reaching over 4,000 feet in Section 34; fir and bull pine to 24 inches, some larger, of fair value; fair grazing land; some scrub poplar and willows in parts.

A. V. Chase, D.L.S., 1912.—(WEST OF THE THOMPSON RIVER).—This strip of steep open side hill of no value.

Tp. 18, R. 24, W. 6th Mer. (EAST OF THE THOMPSON RIVER.) R. D. McCaw, D.L.S., 1910.

The canyons of three streams break this township in such a manner that there is very little land of agricultural value. These streams are Pukaist and Coldwater creeks, in the central part and Inkikuh creek in the south part. Along the river front all of the land of value for any kind of cultivation has been disposed of. The N.E. $\frac{1}{4}$ of sec. 22 has been homesteaded. The altitude of this land is from 3,210 to 3,450 feet above sea level. The owner was not at home during my examination in the district, and I could not locate him. Some of the land had been cleared and wheat sowed which was growing in very scant quantity. Irrigation had been used but growth was a complete failure. The soil was not good, it being a sandy loam with very little vegetable matter. A strip of land one-quarter of a mile wide and extending through secs. 23, 25, 26 into sec. 30 in township 18, range 23, is owned by Mr. Bose of Ashcroft. The statement made by the man looking after the place was that hay only could be grown there and that needed irrigation. There was a fair growth of timothy at an altitude of 3,585 feet. A good new wagon road connects this township with Ashcroft. It runs through secs. 25, 26, and 34 into the township north. The old Highland valley road from Spatsum has fallen into disuse.

SECS. 1, 12.—High rolling country, much over 4,000 feet, parts over 4,500 feet above sea; jack pine to 12 inches usually smaller, occasional fir, patches of mixed scrub and windfalls; fair pine grass.

SECS. 2, 3, 4 (FRAC.).—Steep slopes to Inkikuh creek which flows through, often rocky and broken; no land suitable for agriculture; altitude from about 2,400 at the creek in sec. 4, to nearly 4,500 feet in northeast part of sec. 2; scattered fir to 24 inches, of lumber value, some bull pine, poplar and willow scrub, also jack pine in parts; fair grazing.

SECS. 8, 17, 19, 20 (ALL FRAC. EAST OF RIVER).—Composed of steep, rough, broken slopes to the Thompson river; some rock slides and cliffs; lower parts open, sandy, gravelly, broken slopes with some sage scrub with an odd scattering bull pine (Frac. W. $\frac{1}{2}$'s, 8, 17, 20); on east $\frac{1}{2}$'s of 8, 17, 20 fir and bull pine are scattering on precipitous slopes and of little value; very poor grazing.

SEC. 9, (FRAC.); SECS. 16, 21.—Rough, broken, rocky slopes, often steep and precipitous falling in all directions from rocky knoll at the centre sec. 21, no possible farm land; canyon of Pukaist creek runs through SE. $\frac{1}{4}$ of sec. 16 and through sec. 9; south of creek slopes are steep and rocky, north slopes in sec. 21 fall to Coldwater creek; scattering bull pine and fir to 24 inches generally of poor quality; grazing is poor.

SEC. 10.—Much broken, with steep rocky slopes, stony, no agricultural value; altitude rises to nearly 4,000 feet above sea; some good fir to 24 inches diameter, of lumber value, a few bull pine, some scrub and windfalls; fair grazing.

SEC. 11.—Nearly all over 4,000 feet, broken and rocky, no agricultural value; fir to 24 inches and some larger, also a few bull pine, good lumber value, scrub and some jack pine; fair grazing.

SEC. 13; SEC. 14, SE. $\frac{1}{4}$; SEC. 24, E. $\frac{1}{2}$, SW. $\frac{1}{4}$.—Generally broken and rocky with some steep slopes, general rise towards southeast, 3,725 to 4,600 feet above sea level; no agricultural land; a good deal of fir to 24 inches and sometimes larger, jack pine to 14 inches, some scrub and windfalls, fir is of likely lumber value; fair grazing.

SEC. 14, NE. $\frac{1}{4}$, SW. $\frac{1}{4}$.—Largely workable slopes; sandy loam, parts stony and rocky, 3,770 to over 4,000 feet above sea; of no farm value; good fir to 36 inches, with some scrub; fair grazing.

SEC. 14, NW. $\frac{1}{4}$; SEC. 15, NE. $\frac{1}{4}$.—Rolling and broken slopes, parts steep, very stony, with some rock outcrops; dry sandy loam; 3,300 to 3,945 feet above sea level; some very small areas have low agricultural value, probably too small to take up; scattering fir to 24 inches, with some larger, and some scrub and jack pine; fair growth of pine grass.

SEC. 15, SE. $\frac{1}{4}$.—Generally steep rocky slopes; small rolling area of dark loam in centre, of possible value but likely too small; dry, sandy loam; 3,490 to over 3,800 feet in altitude; some good fir to 24 inches, poplar and willow scrub in parts; fair grazing.

W. $\frac{1}{2}$.—Steep rocky slopes falling westerly to Pukaist creek; some fir to 24 inches with scrub; fair grazing.

SEC. 22, W. $\frac{1}{2}$.—Rough, rolling slopes rising to the west; much rock; lower part in NW. $\frac{1}{4}$ has small farm value, but needs irrigation; stony, sandy loam; 3,180 to 3,640 feet above sea; fir and bull pine to 36 inches, with a good deal of scrub in parts; scant grazing.

SEC. 22, SE. $\frac{1}{4}$; SEC. 23, SW. $\frac{1}{4}$.—Rolling slopes having small areas workable, 3,100 to 3,645 feet above sea; sandy loam, gravelly and stony; doubtful value; scattering fir to 24 inches, some bull pine and scrub; pine grass grazing.

SEC. 23, NW. $\frac{1}{4}$ (FRAC.).—Rough, rolling and parts broken by steep ravine of Pukaist creek; dry sandy loam, stony; 3,320 to 3,655 feet above sea level; little or no farm value; fir and bull pine to 24 inches, some larger, poplar and willows; fair grazing.

E. $\frac{1}{2}$ (FRAC.).—A good deal of workable slope, parts broken and rocky; 3,585 to over 4,105 feet above sea level; dry, sandy loam; fir to 36 inches, of fair value, scrub poplar and willows; fair grazing.

SEC. 24, NW. $\frac{1}{4}$.—Some meadow land in northwest corner, rising to southeast in workable slopes; parts rocky and broken; 3,585 to 4,075 feet above sea level; dry, sandy loam; fir to 30 inches, jack pine to 12 inches and small scrub; fair grazing.

SEC. 25, S. $\frac{1}{2}$ (FRAC.), SOUTH OF C. G.—Rising to south in rolling slope; stony loam, parts workable; 3,585 to 3,920 feet above sea; fir to 24 inches, jack pine to 12 inches, some scrub; fair grazing.

SEC. 25 (FRAC.), NORTH OF C. G.—Rising in easy rolling slopes to north, parts level; 3,600 to 4,000 feet above sea-level; sandy loam with some black soil, parts stony; parts should make good hay land, with irrigation; good fir to 36 inches and some bull pine, much poplar scrub and some jack pine; poor to fair grazing.

SEC. 26 (FRAC.).—Gentle rolling slopes, parts broken; stony sandy loam; 3,585 to a little over 4,000 feet in altitude; very doubtful agricultural value owing to altitude and poorness of soil; good fir and bull pine to 36 inches, poplar and willows; fair grazing.

SEC. 27, S. $\frac{1}{2}$.—Rolling slopes, parts broken; much dark and brown loam with a gravelly clay subsoil, stony in parts; 3,180 to 3,815 feet above sea; some very fair land, but needs water; much fair lumber value in fir and bull pine to 36 inches, with jack pine and poplar and willow scrub; fair grazing.

NE. $\frac{1}{4}$.—Rolling and broken, parts workable sandy loam, very stony; 3,600 to 4,000 feet above sea; a few fir to 24 inches and bull pine to 30 inches, some scrub, pine grass, timber is of good value.

NW. $\frac{1}{4}$.—Rolling with parts badly broken; fair piece of land in southwest corner; sandy loam, stony; needs irrigation; scattering fir and bull pine to 24 inches, of good value; pine grass.

SEC. 28 NE. $\frac{1}{4}$.—Gently rolling; much workable; dry sandy loam, very stony; 3,105 to about 3,400 feet above sea; needs irrigation; bull pine and fir to 24 inches, of good value; rather poor grazing.

SEC. 28, S. $\frac{1}{2}$.—Steep slopes, precipitous, falling to Coldwater creek; no farm value except narrow strip along north side of southeast $\frac{1}{4}$; poor growth of fir and bull pine; scant grazing.

SEC. 28, NW. $\frac{1}{4}$; SEC. 33, S. $\frac{1}{2}$.—Generally rough and broken, but with small areas of dry stony sandy loam, which could be cultivated if water is applied; altitude of these areas from 3,100 to 3,200 feet above sea; some fair fir and bull pine of likely lumber value; rather poor grazing.

SEC. 29; SEC. 30 (FRAC.) EAST OF RIVER; SEC. 31 (FRAC.) EAST OF RIVER; SECS. 32, 33 N. $\frac{1}{2}$.—Generally steep, broken slopes, often rocky and precipitous, ending in broken, gravelly sandy slopes near C. G. and I. R., which are open with some sage scrub and an occasional scrubby fir or bull pine; rises from Thompson river to 4,085 feet at NE. corner of sec. 33; much of slope is almost devoid of timber, there being some bull pine and fir of poor quality, east halves of 29 and 32, and N. $\frac{1}{2}$ of 33 have some good timber to 24 inches of likely value; no farm value; poor to fair grazing.

SECS. 34, 35; SEC. 36, N. $\frac{1}{2}$.—Nearly all much over 4,000 feet; rolling and much broken; some steep slopes; no farm land; stony, sandy loam with much rock; scattering fir to 30 inches and larger, some bull pine, all lumber value, jack pine, poplar and willow scrub in parts, some windfalls; fair grazing.

SEC. 36, S. $\frac{1}{2}$.—Largely broken and rocky; 3,700 to 4,270 feet in altitude; patches workable; sandy loam; some of lower altitudes suitable for hay; needs irrigation; fir to 30 inches, of good value, some jack pine to 14 inches, and scrub; fair grazing.

A. V. Chase, D.L.S., 1912.—(WEST OF THE THOMPSON RIVER.)—This is a narrow strip of land adjoining the Thompson river and is composed mainly of rocky hill sparsely timbered. The south part is fairly open and offers some good grazing areas.

SECS. 6 AND 7 (WEST OF THE RIVER).—Elevation from river level to about 2,500 feet. The southeasterly and easterly parts of these sections are fairly open and offer some good grazing areas. There is a small area of workable land in sec. 7 about 5

acres in extent just west of lot 500. It is of good sandy loam soil but would need irrigation. A few scattering pine and fir are found along the west boundaries of these sections.

SECS 18, 19 AND 30 (WEST OF THE RIVER).—These are all rough and hilly. Sec. 30 is fairly open in the north part but the remainder of this area is covered with scattered pine and fir.

SEC. 31 (WEST OF THE RIVER).—This section contains a narrow strip of workable land adjoining the Thompson river from 10 to 15 acres in extent. It is open land and its soil is sandy loam mixed with gravel. It would be possible to irrigate with small expense by pumping. It is suitable for fruit growing.

Tp. 19, R. 24, W. 6th Mer. (PART EAST OF THOMPSON RIVER.) A. V. Chase, D.L.S., 1910.

This township is on the eastern slopes of the Thompson river valley, and although most of the desirable bench land has been disposed of, there are still a large number of workable flats and benches of good sandy loam soil, alkaline in places. There is, however, no source of water for profitable irrigation at present between Spatum on the south and lot 95 on the north. This seems to be an absolutely dry area and the intense heat of these western slopes has burnt out nearly all vegetation except sage brush, along the open bench lands between the hills and the Thompson river. Nearly all of these workable areas are less than 2,500 feet above sea. There is considerable timber value in the eastern part of the township.

SEC. 1.—No agricultural value; over 4,000 feet above sea; fir from 18 to 24 inches is scattered in a great deal of jack pine to 15 inches, with occasional large bull pine, doubtful lumber value.

SEC. 2.—Rolling rocky country nearly all over 4,000 feet above sea; of no agricultural value; not much fir in north $\frac{1}{2}$ mostly jack pine to 12 inches, scattered timber of possible value in fir 18 to 24 inches, and bull pine to 24 inches; poor grazing.

SEC. 3.—Very rocky; steep slopes; no agricultural value; poor grazing; fair timber, fir to 18 inches frequent, some to 24 inches, bull pine to 24 inches diameter, scattered, of possible value.

SEC. 4.—Mostly useless rock precipice, 1,590 to 4,000 feet above sea; no grazing; bull pine to 24 inches very frequent, with scattered fir to 18 inches.

SEC. 5 (FRAC.).—East $\frac{1}{2}$ is rolling, open bench land, 1,040 to 2,500 feet above sea; a sandy loam soil, gravelly in places; of fruit value, needing water; all is not workable on account of slopes, but probably over half of the area is sufficiently flat; useless at present, no water available; scant to no grazing; part of northeast $\frac{1}{4}$ has scattered bull pine; west $\frac{1}{2}$ (Frac.) is more flat, similar soil to east $\frac{1}{2}$.

SEC. 8, (FRAC.).—East $\frac{1}{2}$ is almost completely rock cliffs, with sprinkling of timber, bull pine and fir to 15 inches; probably 20 acres of land suitable for fruit in southeast $\frac{1}{4}$, 1,360 to 1,500 feet in altitude, useless without water; practically no grazing, west $\frac{1}{2}$ (Frac.) is open bench land from river level to 1,735 feet in altitude above sea, suitable for fruit, but needing water and useless without; rock precipice in northeast $\frac{1}{4}$ occupies about 60 acres, covered with sprinkling of medium bull pine and fir.

SEC. 9.—Very rocky and steep running to over 4,000 feet in altitude; no agricultural value; west $\frac{1}{2}$ has bull pine to 24 inches and jack pine to 15 inches, with scattered fir to 18 inches, doubtful lumber value; poor grazing; east $\frac{1}{2}$ has less timber of value, running into small jack pine to 15 inches; scant grazing generally.

SECS. 11, 12, 10, 13.—High land, much over 4,000 feet, rising to Glossy mountain; of no agricultural value; timber running to small jack pine on heights; some pine grass of little value for grazing.

SEC. 14.—On the side of Glossy mountain; much over 4,000 feet; south $\frac{1}{2}$ has little but jack pine, scrub size to 10 inches, no grazing; north $\frac{1}{2}$ has some timber in fir to 24 inches, bull pine to 24 inches diameter, with some small spruce, probable lumber value; some poor grazing toward north boundary, remainder has no value.

SEC. 15.—Steep side hill no agricultural value; runs to much over 4,000 feet in altitude; good commercial value in fir 24 to 36 inches, with some spruce and bull pine; fair grazing.

SEC. 16.—Mostly precipitous, rock hill; 2,600 to over 4,000 feet above sea; no agricultural value; bull pine and fir to 24 inches, and some jack pine are found on west slopes, doubtful lumber value, a certain amount of bunch grass and timber grass gives fair grazing.

SEC. 17 (FRAC.).—Southwest $\frac{1}{4}$ (Frac.) has about 10 acres of good fruit land, at about 1,200 feet altitude, needing water, otherwise useless; remainder of section very rolling and precipitous, and sparsely covered with timber of no commercial value, bull pine to 20 inches, and fir to 15 inches; grazing poor, dried out with the heat.

SEC. 20, (FRAC.).—Undisposed of part rolling and precipitous in parts; small flats of land suitable for fruit, from 1 to 5 acres in extent are found among the hilly portions; also nearly all the slopes contain workable stretches but all useless at present for want of water; 1,200 to 2,260 feet above sea; scattered bull pine to 18 inches on easterly part; very poor grazing.

SEC. 21.—Altitude is 2,010 to a little over 3,000 feet above sea; west $\frac{1}{2}$ (Frac.) (undisposed of part) has sandy loam soil, very rolling, stony in places; in general not workable; all useless without water, of which there appears to be no source of supply; poor grazing; scattered fir, bull pine to 20 inches. East $\frac{1}{2}$ is much the same; some sharp descents; all of no agricultural value without water; scattered timber only, fir and bull pine to 20 inches; poor grazing.

SEC. 22, ALL BUT L.S. 13.—In general this section is unworkable; 2,780 to 4,000 feet above sea; rolling, stony land, generally of no agricultural value; grazing scant in general. In south $\frac{1}{2}$ is fair lumber value in fir to 24 inches, some scattered bull pine to 30 inches. In north $\frac{1}{2}$ timber is more scattered and of doubtful value, fir, bull pine, and some spruce.

SEC. 23.—Ground too steep and stony for agricultural value; 3,500 to much over 4,000 feet above sea; a good timber section; fir from 24 to 30 inches is found in good quantity, also some 15-inch spruce and scattered bull pine to 30 inches; fair grazing.

SEC. 24.—No agricultural value; all over 4,000 feet above sea; west half shows fair value in fir to 24 inches, with some small poplar, this runs into old burn and small jack pine in east half, rather poor grazing.

SEC. 25.—Slopes too steep for agricultural value; nearly all over 4,000 feet above sea; very fair timber value in W. $\frac{1}{2}$, fir 24 to 30 inches diameter, some poplar thickets, timber runs into small jack pine and open in E. $\frac{1}{2}$ with scrub; grazing fair in W. $\frac{1}{2}$ and poor in E. $\frac{1}{2}$.

SEC. 26.—Mostly gradually sloping land of loam soil; steep in places, but in general workable; 3,095 to 4,000 feet above sea; useless without water; a good timber section, fair class of fir to 24 inches, in some cases trees are small but thickly placed; some poplar thickets and scattered bull pine; scant grazing usually.

SEC. 27.—Gradual slopes rising to the east; 2,570 to 3,500 feet above sea; generally of farm value in W. $\frac{1}{2}$ if watered, no agricultural value without water; more stony in E. $\frac{1}{2}$; some farm value with water; grazing poor; scattered bull pine to 18 inches in W. $\frac{1}{2}$; in E. $\frac{1}{2}$ scattered fir to 24 inches, some spruce to 15 inches, and a good deal of small scrub.

SEC. 28 (FRAC.).—Altitude rises from 1,820 to 2,860 feet above sea. W. $\frac{1}{2}$ (Frac.) undisposed portion, steep, rocky and useless, poor grazing, no timber. E. $\frac{1}{2}$ has probably 15 acres of workable soil in SE. $\frac{1}{4}$, needing irrigation; light, sandy loam; useless without water; poor grazing; scattered bull pine to 20 inches.

SEC. 29 (FRAC.).—Rises from river to about 1,870 feet above sea. W. $\frac{1}{2}$ (Frac.) is very rolling and stony in general; small workable patches of 2 or 3 acres; useless without water; no grazing; open country E. $\frac{1}{2}$, undisposed of portion is rocky and useless.

SEC. 32 (FRAC.).—NW. $\frac{1}{4}$ (Frac.) has about 40 acres of bench land suitable for fruit; altitudes 1,300 feet above sea; needing irrigation, useless without; open land; grazing burnt off. E. $\frac{1}{2}$ (undisposed of portion) has slopes rising from 1,350 to 1,960 feet above sea; sandy loam soil; rolling and stony; only very small patches workable, all useless without water; open, no timber, no grazing.

SEC. 33 (FRAC.).—NW. $\frac{1}{4}$ (Frac.) rolling slopes of little value, useless without irrigation; no grazing. SE. $\frac{1}{4}$ (Frac.) open rolling land of sandy loam soil, fair farm value if irrigated, no agricultural value without water; open land; scant grazing; 2,000 to 2,570 feet above sea.

SEC. 34 (FRAC.).—Altitude is 2,200 feet to 3,100 feet above sea. W. $\frac{1}{2}$ (Frac.) has a good deal of workable soil of sandy loam, especially in SW. $\frac{1}{4}$, stony in places, no agricultural value without irrigation; poor grazing; few scattered bull pine in SW. $\frac{1}{4}$; in the E. $\frac{1}{2}$ the soil is more gravelly, with some stones; workable, no agricultural value without irrigation; poor grazing; few scattered bull pine to 24 inches diameter in NE. $\frac{1}{4}$, some fair scattered fir to 20 inches in SE. $\frac{1}{4}$, running into possible value to extreme SE. of section, scattered bull pine.

SEC. 35.—Only workable parts here are some slopes in SW. $\frac{1}{4}$, of no agricultural value without water; becoming steep and rocky to east and northeast; altitude 2,900 to 4,200 feet above sea; essentially a timber section, scattered fir and bull pine up to 24 inches in N. $\frac{1}{2}$, of doubtful value, running into fair timber value in S. $\frac{1}{2}$ in fir to 18 inches and 24 inches, and scattered bull pine to 24 inches; poor grazing as a whole.

SEC. 36.—No agricultural value, being nearly all over 4,000 feet above sea; timber value only in SW. $\frac{1}{4}$, fair amount of fir to 30 inches, remainder of section high and rocky with small jack pine and open stretches; poor grazing.

A. V. Chase, D.L.S., 1912.—A strip of land in this township of an average width of about one mile lies west of the river. It is chiefly open land with a few acres of bench land fit for fruit growing if irrigated.

SEC. 6.—This section rises steeply from the river level to about 2,000 feet above sea. The east part is all open grazing land very rough in outline. Towards the west part of the section scattered timber begins to appear, but there is not any of commercial value.

SEC. 18.—There is a small bench in this section which is part of a bench extending across the boundary from the township to the east. The whole bench contains about 70 acres of sandy loam soil fairly free from rocks, at an average elevation of 1,400 feet above sea. The remainder of the section is rough open grazing land.

SEC. 31.—Elevation from river level to 1,720 feet. There is a considerable area of workable land in the north part of this section. About 40 acres in the NW. $\frac{1}{4}$ and 30 acres in the NE. $\frac{1}{4}$ are suitable for fruit growing, but would of necessity have to be irrigated as the climate in this locality is very dry. For irrigation purposes water would have to be brought considerable distance. Nearly all the section is open land, but only the north slopes are fit for grazing as the grasses are burnt out on the remainder of the area.

Tp. 20, R. 24, W. 6th Mer. (EAST OF THE THOMPSON RIVER.) A. V. Chase, D.L.S., 1910.

In this township there is very little workable land undisposed of and almost none that can be profitably irrigated. There is a great deal of rolling open land of sandy loam soil in the centre and northeast parts of the township, but it is of an exceedingly dry nature and being situated on rolling heights and hillsides offers no possibility of irrigation. Barnes lake is used as a reservoir for the irrigation of bench lands along the Thompson river, but so many records are already recorded on the available water that some small crops of potatoes failed to mature this season (1910) for lack of sufficient moisture. Settlers on these bench lands declare that with abundance of water they can grow practically any Canadian fruit or vegetable.

SEC. 1.—No agricultural value; 3,900 feet and upwards above sea; mostly bald rock with a few scattered small jack pine; no grazing.

SEC. 2.—No agricultural value; 3,150 to over 3,900 feet above sea; rolling stony land with steep rocky slopes in E. $\frac{1}{2}$; possible value in fir to 24 inches diameter, and spruce to 20 inches in NE. $\frac{1}{4}$. SE. $\frac{1}{4}$ is rocky; small jack pine. NW. $\frac{1}{4}$ has fair timber value in fir to 24 inches and spruce to 20 inches diameter. SW. $\frac{1}{4}$ has fir and bull pine, small to 15 inches diameter. Poor grazing.

SEC. 3 (FRAC.).—2,200 to 3,200 feet above sea; on the whole, too stony for agricultural value but might be worked with abundance of water for irrigation. S. $\frac{1}{2}$ has range of bull pine to 24 inches diameter, of doubtful value; poor grazing. N. $\frac{1}{2}$ is more or less covered with fir and bull pine to 24 inches, some spruce, doubtful lumber value; poor grazing.

SEC. 4, NE. $\frac{1}{4}$.—NE. $\frac{1}{4}$ (Frac.) is composed of open slopes of gravelly soil; 1,780 to 2,250 feet above sea; very stony in places; might be workable, but too steep for irrigation; no grazing.

SEC. 9, E. $\frac{1}{2}$.—1,780 to 2,500 feet above sea; E. $\frac{1}{2}$ is on side of rock hill covered with sparsely placed bull pine to 15 inches diameter, some small spruce; no agricultural value; poor grazing.

SEC. 10, SW. $\frac{1}{4}$; S. $\frac{1}{2}$ OF NW. $\frac{1}{4}$.—From 2,230 to 2,500 feet above sea; rolling rocky land of no agricultural value; no grazing except in isolated spots; a very little scattered bull pine.

SEC. 10, SE. $\frac{1}{4}$; S. $\frac{1}{2}$ OF NE. $\frac{1}{4}$.—Rolling strong land, 2,400 to 3,150 feet above sea, doubtful agricultural value even with irrigation; only occasional bull pine with few scattered fir to 24 inches diameter, and some spruce.

SEC. 11.—All steep, stony hillsides of no agricultural value; 2,700 to 3,940 feet above sea; poor grazing; possible lumber value; fir to 20 inches diameter, and spruce to 18 inches with some bull pine, small brush.

SEC. 12.—All rolling, stony land; 3,300 to over 4,000 feet above sea; open in places with small brush, possible lumber value in fir to 18 inches diameter and spruce; poor grazing.

SEC. 13.—Rolling with steep slopes; 2,660 to about 3,500 feet above sea; parts workable in north $\frac{1}{2}$ but all of no agricultural value without irrigation; stony in places, with poor grazing; probable lumber value in fir and bull pine to 20 inches diameter.

SEC. 14.—Altitude 2,320 to 3,300 feet above sea. Northwest $\frac{1}{4}$ has about 10 acres of improved land, growing vegetables; no record of sale or homestead; remainder of no agricultural value; poor grazing. Southwest $\frac{1}{4}$ is very steep and rolling, no agricultural value; poor grazing. Northeast $\frac{1}{4}$ is rolling, stony land, parts workable, but of no agricultural value without water; grazing fair. Southeast $\frac{1}{4}$ is rolling and stony, no agricultural value; poor grazing; not much timber value in this section, only scattered bull pine and fir to 20 inches diameter.

SEC. 15, (FRAC.).—West $\frac{1}{2}$ is made fractional by Barnes Lake; rest is almost completely composed of large hill, rocky to south and sandy loam to north; impossible to irrigate and of no agricultural value; covered with scattered bull pine and fir to 18 inches in southerly part and becoming open to north; poor grazing. East $\frac{1}{2}$ (Frac.) has a few acres of workable soil in northeast $\frac{1}{4}$, needing irrigation; remainder of no agricultural value, being steep and rocky falling to Barnes lake, with poor grazing. Southeast $\frac{1}{4}$ is made fractional by Barnes lake, and is timbered with scattered small trees of no lumber value, bull pine, fir, poplar, etc.

SEC. 16, E. $\frac{1}{2}$.—East $\frac{1}{2}$ almost entirely precipitous rock hill falling west, of no agricultural value; sparsely covered with small bull pine and fir to 15 inches diameter; very little grazing.

SEC. 21, (FRAC.).—Southwest $\frac{1}{4}$ railway level to 1,660 feet above sea; few small flats of sandy loam soil among steep cut banks; of small value; all open; no grazing; east $\frac{1}{2}$ is open bench land, 1,600 to 2,300 feet above sea, very rolling and hilly; a few small flats of fine soil, but useless without irrigation; no grazing.

SEC. 22, W. $\frac{1}{2}$; NE. $\frac{1}{4}$.—2,030 to about 2,600 feet above sea; almost all the soil herein is a good sandy loam, but the section is situated on high rolling land; no available means of irrigation; of no value but for grazing, which at present is dried out; open land.

SEC. 23, W. $\frac{1}{2}$; NE. $\frac{1}{4}$.—2,180 to 2,850 feet above sea. West $\frac{1}{2}$ is composed of sandy loam soil, a few small flats in south part workable but all useless without irrigation; mostly precipitous and rolling; open land; grazing very poor, has been dried out. Northeast $\frac{1}{4}$ is very rolling and precipitous country with cut banks; grazing poor in general; open country.

SEC. 24, N. $\frac{1}{2}$; SW. $\frac{1}{4}$.—2,600 to 3,000 feet above sea. Northwest $\frac{1}{4}$ is open, rolling land of fair sandy loam soil, a trifle stony in places; would be fair farm land with irrigation, useless without; rather fair grazing; no timber. Southwest $\frac{1}{4}$ is too broken for cultivation; fair grazing; timber scattered; possible value south of Barnes creek, fir and bull pine to 24 inches diameter. Northeast $\frac{1}{4}$ has workable soil, stony in places, needing irrigation; fair grazing; scattered bull pine and fir to 20 inches diameter.

SEC. 25.—2,270 to 3,530 feet above sea. Northeast $\frac{1}{4}$ is rather rocky and of no agricultural value; fairly open with only scattered bull pine in south; fair grazing. Southeast $\frac{1}{4}$ is rolling stony land, too steep and broken for agriculture; fair grazing; scattered bull pine to 24 inches diameter and fir to 18 inches, of no lumber value. Northwest $\frac{1}{4}$ is much the same as northeast $\frac{1}{4}$, but nearly all open land except for very few trees, bull pine to 20 inches and fir to 18 inches diameter; rolling and rocky; poor grazing. Southwest $\frac{1}{4}$ is open, rolling land of fair sandy loam soil, useless without irrigation; fair grazing.

SEC. 26.—1,400 to 2,850 feet above sea, open, rolling, precipitous country with steep cut banks and slides; very stony in places, of no agricultural value; open country; no timber; only fair grazing.

SEC. 27.—Railway level to 2,420 feet above sea. With the exception of a few flat benches in NW. $\frac{1}{4}$ this is all rolling and precipitous land, partly steep hill; sandy loam soil; grazing land, grazing at present dried out; benches in NW. $\frac{1}{4}$ workable with irrigation, but badly located for watering and no available water; open land.

SEC. 28, E. $\frac{1}{2}$ (FRAC.).—E. $\frac{1}{2}$ (Frac.) is similar to sec. 27; all open rolling land with small benches of good loam soil, useless without water except for grazing, which is very poor at present, there is no available source of irrigation.

SEC. 35, SE. $\frac{1}{4}$ (FRAC.).—SE. $\frac{1}{4}$ (Frac.) is open, precipitous and stony cut banks; river level to 2,270 feet above sea; no value except for grazing, which is poor.

SEC. 36, S. $\frac{1}{2}$, NE. $\frac{1}{4}$.—S. $\frac{1}{2}$ railway level to 3,070 feet above sea; steep, rocky broken land with cut banks, no agricultural value; poor grazing; a few scattered small bull pine in SE. $\frac{1}{4}$. Ne. $\frac{1}{4}$ is precipitous cut banks in south, opening into some small flats of workable soil in north part and towards river, all needing water; open, poor grazing; no available source of irrigation.

Tp. 21, R. 24, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

Over one-half the area of this township is open land, particularly the S. $\frac{1}{2}$. Many hundreds of acres of good workable soil in the S. $\frac{1}{2}$ are useless except for grazing on account of the impossibility of profitable irrigation on account of their height above all available water supply. Nearly all the undisposed of portion in the S. $\frac{1}{2}$ of this township is valuable only for grazing. North of the Semlin valley and west of the Bonaparte river, the land is more or less timbered, though exceedingly rough and rocky.

A competent engineer's estimate placed the cost of bringing water into the Semlin valley from the Bonaparte river at about \$80,000, a price considered prohibitive considering the small amount of additional area that would be served. In 1911 not three-quarters of the workable land already taken up was successfully irrigated showing the inadequacy of the present supply.

SEC. 1.—Elevation, from about 900 to 1,500 feet above the sea level. There is a small flat of about 10 acres of workable land in the SW. $\frac{1}{4}$. Might be irrigated by pumping, otherwise the section is of steeply, rolling, open land of no value but for grazing.

SECS. 2, 3 AND 4.—Elevation, from about 900 to about 2,000 feet above the sea. All open land containing as far as can be ascertained no land which can be profitably irrigated. Several flat "benches" or tables of good soil were come across, but in such a position as to put irrigation out of the question. All grazing land. Poor grazing after midsummer.

SECS. 5 AND 6.—Elevation, from about 1,000 to 2,000 feet above the sea. These sections are of a rougher nature, steep rocky hills being noticed with some scattered scrub timber. No agricultural value. Rather poor grazing.

SEC. 7.—Elevation, from 1,400 to about 3,000 feet above the sea-level. This section is mostly steep side hill with a few small flats in the NE. $\frac{1}{4}$. No source of profitable irrigation. Scattered fir to 20 inches in the west part. Rather poor grazing.

SECS. 8, 9, 10, 11 AND 12.—Elevation, from 1,300 to 2,400 feet above the sea-level. This area might all be described as open grazing land. Much of it is workable land of good sandy loam soil but no possibility of irrigation presents itself. It is in general high rolling and in some parts roughly broken. No timber and the grazing is rather poor throughout on account of the dryness of the soil.

SEC. 13.—Elevation, from 1,640 to 2,000 feet and over, above the sea. Open grazing land in south part. No agricultural or timber value. Some workable land undisposed of in N. $\frac{1}{2}$, but no available irrigation. No timber value.

SECS. 14 AND 15.—Elevation, from 1,700 to 2,300 feet and over, above the sea. A small portion in the NE. corner of section 14 and in the NW. corner of sec. 15, workable land needing irrigation. Otherwise all open grazing land.

SECS. 16 AND 17.—Elevation, from 1,400 to 2,500 feet and over, above the sea. With the exception of a small area of workable land in the NE. corner of sec. 16, these sections are all valuable only for grazing. Open rolling land.

SECS. 18 AND 19.—Elevation, from 1,430 to 3,000 feet and over, above the sea. Chiefly steep side hill rising rapidly to the west in sec. 18. No land of agricultural value. Scattering timber in west part of sec. 18. Open land in undisposed of part of section 19, rolling and only fit for grazing.

SEC. 21.—Elevation, from 1,700 to 2,500 feet and over, above the sea. A few acres of workable land in the northwest corner of section needing irrigation; remainder rising steeply through roughly rocky land to the north. No timber value. Poor grazing.

SEC. 22.—Elevation, from 1,700 to 3,100 feet and over, above the sea. About 30 acres of excellent land undisposed in the southwestern quarter. A few acres also along the north boundary of lot 435 but there appears no water for this land. The remainder of the section rises steeply to the north through rough and broken slopes. Some scattered scrub timber of no merchantable value. Poor grazing.

SECS. 23 AND 24.—Elevation, from 1,750 to 3,200 feet and over, above the sea. With the exception of a small area of workable land in the extreme southeast corner of section 23, this land holds no agricultural value. Steeply rising through roughly, broken rocky slopes. It is covered in the north part by scattering small fir and bull pine. Poor grazing.

SECS. 25 AND 26.—Elevation, from 3,100 to 4,000 feet and over above the sea. Very high and rocky in the north part with small jack pine but more open to the southwest. No agricultural value. There is a growth of small fir and jack pine in the south portion, but no merchantable value. Poor grazing.

SEC. 27.—Elevation, from 2,600 to 3,300 feet and over, above the sea. No agricultural value and very little timber, mostly scattered scrub bull pine and fir. Fair grazing of bunch grass.

SEC. 28.—Elevation, from 1,700 to 3,000 feet and over, above the sea. No agricultural value. Rises steeply from west to east with occasional small flats. Occasionally small fir. Bunch grass badly eaten out.

SEC. 33.—Elevation, from 2,000 to 2,800 feet and over, above the sea. Mostly steep and broken, rocky precipices with flatter land in the north part. No agricultural value. A fair growth of fir and bull pine to 24 inches in the north and northeasterly parts. Rather poor grazing.

SEC. 34.—Elevation, from 2,200 to 3,300 feet and over, above the sea. About six acres of the northeast quarter could be worked with irrigation. There is also an area of six or seven acres of the southwest quarter of agricultural value with irrigation. The remainder of the section presents no agricultural value. Fir and bull pine to 24 inches are found in the north part, with scattered clumps of scrub in the south part. Grazing eaten down.

SEC. 35.—Elevation, from 2,460 to 4,000 feet and over, above the sea. No agricultural value. The land rises steeply from the north boundary toward the south, reaching a summit in the southeast quarter. There is some good fir to 24 inches especially in the north part, though a good deal of this has been cut. Fair grazing on the north slopes.

SEC. 36.—Elevation, from 2,620 to 4,000 feet and over, above the sea. Rises at first gradually, then steeply toward the south reaching a summit on the south boundary. No agricultural value. Fair growth of fir and bull pine, but much of the best has been cut. Fair grazing.

Tp. 22, R. 24, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

This township is very rough throughout, rising steeply from the south to an elevation of 4,000 feet and over above the sea, at from one and one-half to two miles north of the south boundary. Little over 10 square miles of the total area is below 4,000 feet above the sea, with the exception of a small area running through the south parts of secs. 1 and 2. No agricultural value is evident in this township. It is timbered throughout, possible merchantable value being evident only in the southern two tiers of sections.

SEC. 1.—Elevation from 2,670 to 3,000 feet and over above the sea. Contains a valley through the south half from the south to 10 chains in width of workable land needing irrigation. Land rises to the north from the centre of the section. It contains a fair growth of bull pine 24 inches, the best of which has been cut. In the north part more fir is seen. Fair grazing.

SEC. 2.—Elevation from 2,460 to 3,370 feet and over above the sea. Only a very small portion of workable land appears herein. About 30 acres in the southeast quarter needs water. The valley of Cache creek is narrow with steep slopes, rocky on both sides. A fair growth of bull pine and fir to 24 inches; probable merchantable value.

SEC. 3.—Elevation from 2,460 to 3,570 feet and over above the sea. The south half of this section rises to the north from Cache creek very steep and rocky. Poor grazing and no merchantable timber. The north half is not so steep, but still rough and of no value. Poor grazing.

SEC. 4.—Elevation from 2,820 to 3,700 feet and over above the sea. A very rough section throughout; rocky and broken. Some bull pine and fir to 24 inches but of doubtful merchantable value. Fair grazing.

SECS. 5 AND 6.—Elevation from 2,800 to 3,800 feet and over above the sea. Mostly open in the south part with fir and bull pine to the north. No agricultural value. Very rough. The merchantable value in timber is very doubtful. Grazing eaten down.

SECS. 7 TO 10 INCLUSIVE, AND 17 TO 18.—Elevation from 3,700, to 4,000 feet, and over above the sea. High rough land having no agricultural value. The westerly

part of this area has been subject to forest fires which have been raging for some days (August 3rd, 1911), and any merchantable timber existent is very likely destroyed except perhaps in the south part of sec. 8. There was considerable good fir to 30 inches in this locality. There is some fair growth of fir to 30 inches in the easterly and northeasterly part of sec. 10 with fair grazing.

SECS. 11 AND 12.—Elevation, from 2,900 to 4,000 feet and over, above the sea. Rough land, unfit for agriculture. Rising to north and northwest. Very rocky in parts. Poor timber in section 11, but some fair-sized fir toward the east part of sec. 12. Rather poor grazing.

SECS. 13 AND 14.—Elevation from 3,500 to 4,000 feet and over above the sea. Rising rapidly to the north, this area presents no agricultural value. Some fir and bull pine to 30 inches in the south part, but scattered and running into jack pine in the north. Poor grazing in general.

SECS. 15 AND 16 AND 19 TO 36 INCLUSIVE.—The remaining area of this township is all over 4,000 feet above the sea level, and as such was given little detail examination. Secs. 15 and 16 show little timber value, being mostly covered with jack pine forests. The western part in the neighbourhood of secs. 19 and 20 was covered with forest fire at the time of examination and the timber is no doubt more or less destroyed. The remainder of the north part of the township shows little value of any kind, being rough country covered with a small second growth of timber, mostly jack pine, but occasional small stretches of fir are seen. Much old and recent burn is found throughout the north part.

Tp. 23, R. 24, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

This township presents great difficulties of entrance principally because of its altitude and seems of little value for any purpose but such occupation as does not need the company of wagons as mode of conveyance. With the exception of a small area in the west part in the valley of Scottie creek, all the land is over 4,000 feet above the sea, and consequently useless for agricultural purposes. Timber value is not marked, but the Scottie valley affords good summer range for stock.

SE. $\frac{1}{4}$ OF THE TOWNSHIP.—Elevation all over 4,000 feet above the sea. Almost completely valueless. A rolling, rough area with considerable rock outcrop. No timber of any value, the whole being almost completely covered with a growth of small jack pine, some places in veritable thickets. This area has also been almost completely burned over during this (1911) season. While this timber has not been burned down, great areas of dead burned small timber are seen standing, making a desolate useless area. Nearly all the underbrush and grazing have been destroyed to such an extent that several years will be necessary to restore it.

NE. $\frac{1}{4}$ OF THE TOWNSHIP.—This is also a useless area, and with the exception possibly of about 100 acres in the SW. $\frac{1}{4}$ of sec. 22, all of this area is over 4,000 feet above the sea level and consequently useless for any agricultural purpose. It is even more useless than the SE. $\frac{1}{4}$ of the township, for a bird's-eye view of it gives one the impression of a desolate blackened area with a few of the larger jack pine still standing. A closer inspection shows a continual series of gullies and small hills covered with old burn and fallen timber, while recent burn has destroyed nearly all the small vegetation such as scrub growth and grass. The bottom land along the valley of Scottie creek and branches has escaped this season's (1911) fire more or less and still affords good grazing for stock. A range of small scattering fir is also found close to the creek on the north side in sections 22nd and 23, but nothing of merchantable value.

SW. $\frac{1}{4}$ OF THE TOWNSHIP.—With the exception of part of the gulch of one of the branches of Scottie creek in sec. 16, all this area is over 4,000 feet above the sea level and consequently useless for agricultural purposes. The only value herein is in scattered ridges of fir running to 25 inches in some parts, but mostly of a small size.

This is found in small quantity in the NW. $\frac{1}{4}$ of sec. 16, in the N. $\frac{1}{2}$ of secs. 17 and 18. The remainder of the country to the south affords only unbroken stretches of jack pine with evidences of recent burn here and there. Timber herein is not of merchantable value. Grazing is of timber grass.

SEC. 19.—Elevation from 3,000 to 4,000 feet and over above the sea. Considerable flat land adjacent to Scottie creek that if cleared and irrigated would be of agricultural value. It does not appear that there is a great deal of frost here during the summer months. Possibly 60 to 80 acres of land farmable, covered more or less with a fair growth of fir to 25 inches with some bull pine. Fair grazing.

SEC. 20.—Elevation from 3,350 to 4,000 feet and over above the sea. A steeply rolling section of no agricultural value. Very precipitous and rocky about Scottie creek. Timbered with fir to 20 inches fairly well in south half, but north half holds a good deal of small stuff, jack pine around the creek bottom. Fair grazing.

SEC. 21.—Elevation from 3,600 to 4,000 feet and over above the sea. Steeply rolling and of no agricultural value. Some good grazing areas in creek bottom. Very little timber value. Mostly jack pine. Scattered fir to 20 inches along the creek. *

SECS. 28, 29, 30, 31, 32, 33.—Elevation from 3,460 to 4,000 feet and over above the sea. This area is comprised chiefly of high rolling land of no agricultural value. Along the south part fir and bull pine are found, but not of merchantable value. As one goes northerly the old burn becomes more prevalent and little timber of any size remains standing. The ground is covered with small second growth of pine and poplar. Grazing very fair.

Tp. 24, R. 24, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

This fractional township is almost a completely useless area, being with the exception possibly of a few acres along Hihium creek gulch in sec. 8, all well over 4,000 feet above the sea level. In the north part in the immediate neighbourhood of Hihium creek, some scattering bull pine are seen, but in general the heights are unbroken areas of old burn covered with fallen burned timber and small second growth jack pine, poplar and cottonwood. A fair grazing area for summer range. No merchantable timber value.

Tp. 15, R. 25, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

This township is traversed through its westerly part by the Thompson river valley and through its southeast part by the valley of Nicomen creek. With the exception of some small areas in these valleys the land has practically no agricultural value. A small area of low-lying land along the Thompson river is fairly open, but otherwise the land is all timbered.

SOUTHWEST PART, SOUTH OF THE THOMPSON RIVER AND WEST OF THE NICOMEN RIVER.—This is a very rough area, the land sloping upwards from the Thompson river to the south through a broken and rocky formation. Much of it is almost inaccessible. Several sloping benches affording good grazing on bunch grass are met with, but are of small value on account of their inaccessibility. Timber, fir and bull pine is small and stunted and of no commercial value. A small valley runs south through sections 8 and 5, but on examination this proved of no value except for small areas of merchantable timber.

SE. $\frac{1}{4}$ OF THE TOWNSHIP.—Elevation from 1,250 feet up. This area contains the valley of Nicomen river. To within about a mile of the south boundary of the township the valley is a deep V-shaped gulch. South from this point it widens out to about a mile in width and the land slopes upward to the south. There is no agricultural land in this locality, the soil being all rocky and rough and much cut up by small coulees. It is thickly covered with dense jack pine, poplar and willows.

nearly as far south as within a mile of the south boundary of the township at which point good bull pine and fir become most in evidence, and a very fair class of this timber is found in quantity to the south boundary. The hills to east and west of the valley are very rugged and broken, with a great deal of rock formation throughout. The hills are all timbered with pine and fir, though of a rather stunted nature as a rule. Some fair grazing on the hills.

SEC. 16 (NORTH OF NICOMEN RIVER).—Elevation, from 1,250 to 1,700 feet. A portion of this is not included in Kikinalko Indian Reserve No. 2. About 10 acres of excellent bench land extend from sec. 21 into the NE. $\frac{1}{4}$ of this section. It is composed of clean light sandy loam soil and would need irrigation. The remainder is rough and rolling and timbered throughout with pine to 20 inches and a few scattered fir. Grazing is poor.

SEC. 17 (NORTH OF THE NICOMEN RIVER).—Elevation, from 600 feet to about 900 feet. This small area is chiefly open rolling side hill fit only for grazing. A few scattered small pine in evidence.

NORTHWEST PART OF THE TOWNSHIP WEST OF THE THOMPSON RIVER.—Little detailed examination was made of this area which rises from the water's edge of the Thompson river through the broken and rocky formation of the Scarp mountains. The vegetation on this area is very scant with the exception of some easterly and northeasterly slopes which are better protected from the direct heat rays. What soil exists over the rock formation is very shallow, resulting in small and scrubby timber growth. Timber is bull pine and a few fir, all being fairly scattered.

SEC. 20 (EAST OF THE THOMPSON RIVER).—Elevation, from 520 to 1,500 feet. In the SE. corner of this section there is a small bench of about three acres. It is good clean sandy loam soil but being very much higher than any source of irrigation; within reasonable cost its value for agricultural purposes is doubtful. The remainder of this area is steeply rolling and timbered with scattered bull pine. Grazing is fair on bunch grass on the north slopes.

SEC. 21.—Elevation, from 900 feet to about 2,850 feet. The SE. $\frac{1}{4}$ of this section contains a small area of bench land which extends into sec. 16. About 15 acres of flat land of clean sandy loam soil lie in this quarter at an elevation of 1,700 feet suitable for fruit growing. This area is covered with a good class of bull pine to 20 inches. This could be irrigated from Nicomen river. The remainder of the section is steep and rolling with a good deal of rock formation. It is timbered throughout with a rather poor quality of bull pine and a few scattered fir. The north slopes afford very good grazing.

SEC. 22.—Elevation from 1,700 feet to 3,000 feet. This section contains nearly one hundred acres of agricultural land that is at an elevation suitable for dry farming. This area is found around the centre of the section and narrowing towards the centre of the south boundary. It is of sandy loam soil rather darker than that of lands nearer the river and is fairly free from stones. Considerable bull pine of fair size is found throughout its area. The remainder of the section is steeply sloping and too rough for agricultural purposes. This section is timbered throughout but shows little timber of real merchantable value. Grazing is fair throughout.

SECS. 23 AND 24.—Elevation, from 3,000 feet up. These sections are composed chiefly of steeply sloping land adjoining the bed of a small creek which flows into the Nicomen river. The timber consists of a good deal of small jack pine in the lower levels with scattering bull pine and fir of fair size on the side hills. Grazing is fair.

SECTION 29 (EAST OF THE RIVER) AND SEC. 28.—Elevation, from 530 feet at the river level to 2,800 feet. This area is rough and broken throughout and without agricultural value. Near the Thompson river the land is fairly open but as one goes east scattered scrub timber begins to appear and the east part of sec. 28 is fairly well covered with scattering pine and fir of small size. Value only in grazing.

SEC. 33.—Elevation, from 5,500 feet to 2,600 feet. This section is even rougher than those to the south, there being an amount of broken rock formation and precipice.

Timber is very stunted and scattered. There is very little grazing except on some north slopes.

SECS. 25 TO 27 AND 34 TO 36.—This area is located more or less on what is known as the Nicomen plateau. A great deal of the country is open and rolling and affords excellent grazing area. Strictly speaking this area is not a plateau but a series of easily rolling slopes rising toward the NE. corner of the township. There is considerable area of good workable sandy loam soil at an elevation possibly suitable for dry farming although it is somewhat higher than that of the Rose hill district, running into elevation over 3,500 feet above sea. For this reason it has not been openly classed as agricultural land although its natural contour and soil are suitable. No skilled cultivation of any kind has been carried on in this district at such an elevation so no information was available as to the possibilities. Some scattered stretches of bull pine and fir 18 inches to 24 inches were met with but hardly in such quantity as to warrant classification as merchantable timber.

Tp. 16, R. 25, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

The Thompson river flows southerly through the west part of this township and is bordered on the west by steep rocky timbered hills. To the east the land is broken near the river but rises more easily as one goes eastward. Very little agricultural land is met with, the land being almost entirely of a rolling and broken nature. With the exception of some lands within half a mile of the river and some scattered areas on Nicomen plateau this area is timbered land.

SE. $\frac{1}{4}$ OF THE TOWNSHIP.—This area is composed chiefly of lands known as the Nicomen plateau. Strictly speaking this section of the country is not a plateau but is more or less easily rolling country having elevations reaching to about 4,000 feet above the sea. Much of it is fairly open and affords excellent grazing and areas also are seen which are composed of good sandy loam soil but there is great doubt as to the agricultural value of these. The timber is not in such quantity as to warrant much notice. It is in scattered stretches and of small size.

SOUTH WEST QUARTER OF THE TOWNSHIP (WEST OF THE RIVER).—No agricultural land was discovered herein west of the Thompson river. Outside of the Indian reserves this land rises steeply from the river banks through rock slides and slopes. It is timbered throughout with small fir and pine but this timber is of poor quality and much of it is almost inaccessible. There is very scant grazing on these hills.

SEC. 8 (EAST OF THE RIVER).—This section contains 30 acres of fruit land east of the river and west of the Canadian Pacific railway running in a narrow strip into both the northeast and southeast quarters. It lies at an elevation of 730 feet above the sea and is composed of a somewhat stony sandy loam soil covered with a few scattered young pine and fir. No grazing.

SEC. 4 AND 9.—This is a most rough and broken area, the land rising abruptly from the river level through rocky slides and precipices. The easterly part is not so rough but rises steeply and is timbered with scattered pine and fir. There is some fair grazing on the north slopes.

SEC. 16.—The land rises steeply from the river level to the east boundary of the section. The west half is fairly open with steep sandy slides but the west half is more or less timbered. There is no commercial value in land or timber in this section. Some very fair grazing on the north slopes.

NORTHWEST QUARTER OF THE TOWNSHIP (WEST OF THE RIVER).—There is situated partly on the NE. $\frac{1}{4}$ section 32 and partly in the NW. $\frac{1}{4}$ section 33, a rather steeply sloping bench of a stony sandy loam soil. There is a portion of this fenced and a little cultivation attempted but with small success. About 40 acres of this land at an elevation of 1,000 feet is workable. Aside from this area the land is all steep rocky slope and slide and is timbered throughout, small and medium sized bull pine and fir being the rule. It is not very thickly placed. Grazing is scant particularly in the lower levels.

SEC. 21.—Elevation from river level to 2,510 feet above sea.

This section is divided through its centre by a steep gulch and creek. The formation is nearly all sandy loam but is much cut up except in the northeast quarter into which a small area of bench land extends from section 28. The section is timbered with pine and fir though rather scattered and of small size. There is some good grazing on the north slopes.

SEC. 22.—Elevation from 1,920 feet to about 3,300 feet. A very broken and rolling area, all sandy loam formation with traces of gravel. Timber very scattered. Grazing poor.

SECS. 23 TO 26.—Elevation from 2,930 feet to 4,000 feet. The south parts of sections 23 and 24 are mostly steep rolling land timbered with scattered pine and fir of fair size. There is a small flat of 10 acres of good loam soil in the northwest quarter of section 23. Grazing is good.

of section 23. Grazing is good. The southeast quarter of section 26 contains considerable good level land of sandy loam at an elevation of 3,100 feet. This should be suitable for dry farming. It is covered with scattered pine and fir. The remainder of thi area is chiefly rolling, timbered with a fair amount of medium sized pine and fir in the north part.

SEC. 27.—Elevation from 2,510 feet to 3,500 feet. The west half contains a fine bench of sandy loam soil from 75 to 100 acres in extent. It is comparatively level and in the east part is fairly free from timber. The elevation of this bench is 2,500 to 2,700 feet above sea and holds possibilities of success with dry culture. In the western portion of the bench there is a quantity of good pine timber showing some trees to 30 inches. The remainder of the section is fairly steep and all timbered with medium-sized fir and bull pine. The grazing is fair.

SEC. 28.—Elevation, from 710 feet to about 2,700 feet. About 50 acres of the southeast quarter of this section is good bench land of sandy loam soil covered with bull pine to 20 inches and is free from underbrush. Its elevation is about 2,500 feet above sea. The remainder of the section is very steep, rising eastward from the river through broken slopes. It is timbered land, being covered with bull pine and a few small fir. Some in the north part has been affected by fire. Grazing fair.

SEC. 29 (EAST OF THE RIVER).—In the southeast quarter there is a flat of about 15 acres between the C.P. Ry. tracks and the river at an elevation of 700 feet. The flat is fairly level and free from timber, but the soil is rather stony.

SEC. 33 (EAST OF THE RIVER).—Elevation from 700 feet to 3,100 feet. This section is much cut up by banks and gullies. It is valuable only for grazing purposes. Timber of scattered small pine.

SECS. 34 AND 35.—Rise from 1,300 feet to the east through rolling country. This is chiefly timbered land of no commercial value. Rocky formation in the east part. Fair grazing.

SEC. 36.—Elevation from 1,890 feet to 4,000 feet. All high, rough, timbered land with considerable rock outcrop. The timber is fir and bull pine of medium size. Grazing fair.

Tp. 17, R. 25, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

This township is composed of steep hills sloping down to the valley of the Thompson river, which runs through its southeast part. The valleys of Twaal creek and Murray creek are steep gulches with small areas of bench land adjoining. Most of the northerly and westerly part is timbered land while the land in the southeast in the immediate vicinity of the Thompson river is fairly open.

PORTION SOUTH OF THE THOMPSON AND WEST OF THE NICOLA RIVERS.—Rises without exception steeply to the south from the river level towards the high summit of the Nicomen plateau. The lower part of the slopes is fairly open with scattered timber about one-half mile from the rivers. Small and medium-sized pine and fir appear as one rises in elevation, and the south part is fairly well covered with

medium-sized timber. Some good grazing on the north slopes. There is a small workable flat of about 5 acres in the S.E. $\frac{1}{4}$ of sec. 4 at an elevation of 800 feet above sea. It would need irrigation, and there is no apparent supply.

SECS. 5 TO 9, 17 AND 18.—These sections are made up of a steep rocky mountain which rises to a summit known as "Arthur's Seat." This area is classified as timbered land, but there is no merchantable value of any kind.

SEC. 16.—Elevation from 1,450 feet to 3,010 feet. The northeast quarter contains about 60 acres of bench land at an elevation of 2,000 feet above sea. This is good sandy loam soil and is well timbered with pine to 18 inches. This bench could be irrigated from Murray creek. The south and west parts of this section are steeply sloping and much rock formation is in evidence. It is timbered throughout with pine to 16 inches. Grazing is fair.

SEC. 10 (NORTH OF THE THOMPSON RIVER).—Elevation, from 750 feet to 2,020 feet. The NW. $\frac{1}{4}$ contains a portion of a bench which extends northwards into sec. 15. About 50 acres of sage brush bench, slightly timbered is seen here. It is sandy loam soil and could be irrigated from Murray creek. The remainder of the section is extremely rough and hilly and is slightly timbered in the north part. The south part near the river is fairly open land and is steeply rolling. Rather poor grazing.

SEC. 11 (NORTH OF THE RIVER).—Elevation from 760 feet to 2,020 feet. This area is steep and broken, rising rapidly to the north. Scrub timber only in the lower levels and scattering pine in the north part. Grazing scant. There is a portion of flat sandy land in the form of an island in the NE. $\frac{1}{4}$ and extending into sec. 12. This is timbered land but there is no commercial value in the timber. The soil is composed almost entirely of clean dry sand and gravel and would be of no value agriculturally.

SECS. 12 AND 13 (NORTH OF THE RIVER).—Elevation, from 770 feet to 2,000 feet. These sections are steep rolling hill with a good deal of rock outcrop. There is practically no timber on the lower levels and only scattering pine and fir on the heights. The grazing on this area is scant and dried out.

SEC. 14.—Elevation, from 1,000 feet to 2,450 feet. This section is divided from north to south by a steep gulch flanked on either side by rolling hills. It is thinly timbered with medium sized pine. Grazing is scant.

SEC. 15.—Elevation, from 1,510 feet to 3,010 feet. A small piece of bench land in the southwest corner is all the agricultural land in this section. It is part of an area crossing the north boundary of sec. 10, leaving 10 acres in sec. 15, of sandy loam soil, which could be worked. There is a good bench in the SW. $\frac{1}{4}$ but as it is on the top of a round hill, profitable irrigation is practically impossible. This section is more or less timbered throughout but the timber is small and scrubby. Grazing is poor.

NW. $\frac{1}{4}$ OF THE TOWNSHIP.—This area is nearly all steep mountain rising to an altitude of 5,500 feet above sea. The valley of Murray creek was examined as far west as the west boundary of the township. To within a mile of the west boundary the valley is a steep rock gulch with rock slides to north and south. It then widens out into rolling country having a good growth of fir and pine on the north side. Very little agricultural land was noted here the soil being rather stony and as at present the locality is practically inaccessible except on foot it was not considered worth while locating as to section.

SEC. 22.—Elevation, from 2,350 feet to about 3,500 feet. A rough hilly section timbered with fair bull pine 12 inches to 24 inches. Scant grazing.

SECS. 23 AND 24.—The undisposed of part of these sections is composed of rolling hills rising from the Thompson river in the east part to a summit in the east part of sec. 23. The land near the river is fairly open but the land in sec. 23 is mostly timbered with pine and fir of medium and small size. The grazing is scant.

SECS. 25 AND 36.—Elevation from 1,000 feet to 2,000 feet. The undisposed parts of these sections are chiefly steep side hills extremely rough in the north part. The lower levels are fairly open but the lands in the west part are sparsely timbered with pine and fir of medium size. Grazing is poor.

SEC. 26.—The SW. $\frac{1}{4}$ of this section contains a small flat of about 8 acres of sandy loam soil fenced and planted in hay and fruit trees. It is immediately adjoining Cook's Ferry Indian Reserve No. 5, and lies at an elevation of 2,000 feet. The remainder of the vacant lands in the section is steep side hill timbered with medium sized fir and pine in the SW. part and more open in the NE. part. Grazing poor.

SEC. 27.—Elevation from 2,610 feet up. This section is steep hill timbered with rather scrubby fir and pine. Grazing fair.

SEC. 34.—This section contains a fine bench of from 20 to 25 acres of sandy loam soil near the centre of the north boundary of the section. It lies at an average elevation of 2,900 feet above sea and should be very fertile with irrigation while under dry culture success might be met with. It is thinly covered with a few burned and dried trees and is free from underbrush. The remainder of the section is steep timbered hill some of which has been burned over. Poor grazing.

Tp. 18, R. 25, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

This township is traversed by two valleys running in a southeasterly direction. The valley of Twaal creek runs from the northwest corner of the township to the south centre, and the valley of Venables lake and creek through the northeasterly part. Steep mountains divide these valleys and each of them is flanked on either side by the same class of hills. Practically no agricultural land is vacant in this township, its resources consisting chiefly of grazing and timber land. A good wagon road runs throughout Venables valley but Twaal valley is accessible only by way of a pack trail.

PART WEST OF TWAAL CREEK.—There is no agricultural land here. In the south part the hills come right down to the water's edge of the creek and north of sec. 9 the boundaries of the Indian reserve have been run close to the base of the hill or on it. The timber in this area has been much destroyed by fire in the south part. This is true as far north as the centre of sec. 17 where good timber begins to appear. Good fir of merchantable value was found in the north halves of secs. 17 and 18 but north of this in the valleys of Blue Earth creek only scrub timber was found. On the east slope of the divide between the valleys of Blue Earth and Twaal creeks merchantable timber was found. The valley of Blue Earth creek, through secs. 20, 19, and 30, is a steep V-shaped gulch.

Going northward up Twaal valley on the east of the Indian Reserve No. 6, no agricultural land was found. Grazing was found to be fair to good through secs. 2, 3, 10, 11, 15 and 16. Timber in this area is composed mostly of bull pine and fir running 12 inches average and not very thickly placed. Some small areas in the lower levels give good lumber value in fir and pine.

Continuing northward through secs. 16, the north part of 20, 21 and the east parts of 29 and 32, no agricultural land was found outside the Indian reserve boundaries. The hills on the east of the valley afford excellent grazing and in many places are more or less open, particularly in the higher altitudes. There is a quantity of good timber in fir 12 inches to 30 inches in the lower levels but it is not very abundant.

The Indian reserve is shown to include Twaal lake in sec. 32. On tracing out the old lines, using pacing as a basis of measurement this does not seem to be the case. There is an area of 40 to 50 acres of good hay land around the south end of Twaal lake in sec. 32. It is mostly willow bottom land of dark loam or mould soil and has a creek flowing through it.

SEC. 1.—This section is entirely rocky and precipitous. It rises steeply from near the river level to westward and is studded with scrubby fir and a few pine. Grazing poor.

SEC. 12.—Elevation from 2,000 feet to 3,000 feet. Rises steeply to west, very rough and rocky. Poor grazing. Scattered patches of scrub fir.

SEC. 13.—Elevation, from 2,110 feet to 3,000 feet. Rises to the east and west of Venables valley, a steep range of mountains to the west and rock hills to the east. It is mostly wooded with stunted fir. The grazing is fair to the west of the valley.

There are about 6 acres of bottom land in the NW. $\frac{1}{4}$ immediately adjoining lot 384. This is fit for mixed farming but there is no source of irrigation as Venables creek had ceased flowing except for a small trickle of water in the early part of July.

SEC. 14.—Rises steeply from an elevation of 2,360 feet southwestward through a hilly and broken country. Stunted timber and poor grazing.

SECS. 23 AND 26 (WEST OF VENABLES CREEK).—Elevation from 2,180 feet rising to the westward. There is strip of gently adjoining lots 383 and 384 in these sections that might prove fertile with irrigation. It is rather sandy soil and rocky. No source of irrigation is apparent and its agricultural value without it is negligible. Otherwise the section is steep side hill covered with stunted and scrub fir with considerable undergrowth.

SEC. 24.—Elevation, from 2,010 feet to about 2,500 feet. This section is steep broken hill with a good deal of solid rock outcrop. Open bull pine timber of medium size. Fair grazing.

SEC. 25.—Elevation, from 1,160 feet to 2,500 feet. No agricultural land. The west part of this section is steep and broken and timbered with open pine and fir of small and medium size. The east part slopes rapidly down toward the Thompson river and is open grazing land with a few isolated clumps of timber.

SEC. 26 (EAST OF VENABLES CREEK).—Elevation, from 2,110 feet to 2,500 feet. There is an area of 15 to 20 acres in the SE. $\frac{1}{4}$ adjoining lots 383 and 17 that is of workable soil. It is sandy clay loam sloping land and slightly stony in places. It needs irrigation. The remainder is steep side hill with open bull pine timber. Poor grazing.

SEC. 27.—Elevation, from 2,500 feet upward. Steep side hill with fir and small pine. Fair grazing.

SEC. 34.—Elevation from 2,230 feet to about 3,000 feet. About 50 acres of sandy loam soil are found in the NE. part. The agricultural value of this is very small without irrigation and no source of irrigation is apparent. The section is all timbered land being covered with fir to 20 inches and a few scattered good pine to 24 inches. Grazing fair.

The remainder of the divide between Venables and Twaal valleys is high timbered hill rising to an altitude of 5,000 feet above sea. There is an amount of good fir and pine all over the summit.

SEC. 35.—Elevation, from 2,200 feet to 2,520 feet. All open bull pine hill. Poor to fair grazing.

SEC. 36.—Elevation, from 900 feet to 2,500 feet. The westerly and southwesterly parts of this section are timbered hill, with pine and fir of medium size. The central and easterly part slopes rapidly down to the Thompson river through open rolling grazing land.

The NE. $\frac{1}{4}$ contains about 35 acres of fruit land adjoining the Thompson river. This is sandy loam soil with a ridge of gravel. It is open and covered with sage brush.

Tp. 19, R. 25, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

This township is divided from east to west by the valley of Oregon Jack creek, with the land throughout having a general rise to the west and reaching an elevation of 6,000 feet above sea in the southwest part. A number of settlers have taken up land in this township and little agricultural land remains undisposed of. The township is for the most part timbered with a few acres in the easterly and northeasterly parts of open land.

SECS. 1 AND 2.—Elevation from 1,650 feet to 3,000 feet. The undisposed of part of these sections is very hilly and rough. The soil is sandy and rocky. There is a quantity of good pine timber. Grazing is fair.

SEC. 3 AND W. $\frac{1}{2}$ OF SEC. 10.—Elevation, from 2,400 feet upwards. These areas rise steeply to the west through rocky mountains. They are all timbered land but the timber is small and stunted and there is considerable fir underbrush. Poor grazing.

SEC. 11 (NW. $\frac{1}{4}$ AND E. $\frac{1}{2}$) AND W. PART OF SEC. 12.—Elevation from 1,500 feet to 2,510 feet. The land is uneven and rolling and while there is considerable sandy loam soil it is not adapted to agriculture. It is also very rocky in places. There is a little scrub fir and scattered pine. The land is suitable for grazing.

SEC. 13.—Elevation from 1,400 feet to 2,050 feet. That portion of this section lying east of lot 789 contains a bench of workable soil which lies partly in this section and partly in the one to the east. There is an area of about 70 acres of sandy loam soil fairly free from rocks. This would be suitable for fruit with irrigation. The west part of the section is badly cut up by hillocks and gullies and the soil is rocky. Very little vegetation of any kind except sage brush.

SEC. 14.—Elevation from 1,770 feet to 2,510 feet. The E. $\frac{1}{2}$ is very broken and rough with rocky soil. It is fairly open and shows little vegetation but scattered pine with an undergrowth of sage brush. The W. $\frac{1}{2}$ is rolling and timbered with good pine and fir to 24 inches. There is little undergrowth and the grazing is good. There are a few small scattered areas of workable land in the W. $\frac{1}{2}$ which might be utilized for hay but it is extremely doubtful whether these could be profitably irrigated.

SEC. 15 (S. $\frac{1}{2}$).—Elevation from 2,250 feet rising steeply to eastward. The SE. $\frac{1}{4}$ is rolling timbered land mostly good workable sandy loam soil but of small agricultural value. There is considerable good pine and fir to 24 inches. The SW. $\frac{1}{4}$ rises steeply to rocky mountains and is of no value. Only scrub timber.

SEC. 22 (W. $\frac{1}{2}$).—The W. $\frac{1}{2}$ of this section is steep side hill rising rapidly to the west and north. It is timbered with pine and fir of medium size. Fair grazing.

SEC. 22 (NE. $\frac{1}{4}$).—This is all steep side hill with scattering pine and fir.

SEC. 23.—Elevation from 1,670 feet to 2,720 feet. This section has a steep slope from the northwest corner easterly and southerly toward the Thompson river and Oregon Jack creek. There is no agricultural land. The timber is fir and pine but mostly small and stunted and rather scattered. The section is fairly open in the east part. Rather poor grazing.

SEC. 24.—Elevation from 1,340 feet to 1,770 feet. The east part is composed of a small sparsely timbered hill, open in the south part. There is a narrow strip of good sandy loam soil about 5 to 10 chains wide running north and south through the north centre of the section, suitable for fruit. The west part of the section is fairly open but steeply rolling and broken. A few isolated pine and fir. Grazing poor.

SEC. 25.—Elevation from 1,290 feet to 2,000 feet. There is a strip of sandy loam soil running from the south centre to the northwest corner of the section and varying in width from 5 to 10 chains. At the northwest corner of the section it widens out and about 7 acres are planted in alfalfa. The remainder of the section is open grazing land very rough in outline and covered with scattering bull pine.

SEC. 26.—Elevation from 1,610 feet to 2,720 feet. The S. $\frac{1}{2}$ of this section is all steep slope covered with rather stunted bull pine and fir. The NE. $\frac{1}{4}$ is very steep and broken but more open in the north part. Grazing is rather poor.

SEC. 27 (W. $\frac{1}{2}$ AND SE. $\frac{1}{4}$).—Elevation from 2,300 feet up. The SE. $\frac{1}{4}$ of this section contains a small area of gently sloping land which has the appearance of having been improved at one time. This is an area of about 10 acres on which the timber has been cut and a shack built. It is possible to irrigate it from Oregon Jack creek. The W. $\frac{1}{2}$ rises steeply to the west and holds no agricultural value. It is timbered throughout but the timber is small. Grazing is fair.

SEC. 34.—Elevation from 2,010 feet up. Fairly good open grazing land on the east part but rising rapidly toward the west to big timbered hill. No agricultural value.

SEC. 35.—Elevation from 1,610 feet to 2,010 feet. The NW. $\frac{1}{4}$ is grazing land rising to the west with a little scattered timber. The SE. $\frac{1}{4}$ contains about 12 acres of excellent soil planted in alfalfa and 30 acres of gently sloping bench. This land is sandy loam soil a trifle sandy in the west part. They are immediately south of lot 14. Grazing poor.

SEC. 36.—Elevation from 1,560 feet to 2,000 feet. About 2 acres in the southwest corner are good sandy loam soil and planted in alfalfa. The remainder of the section is steeply rolling reaching a summit in the south part of the section. It is sparsely timbered in the central part and fairly open in the extreme east and west parts, affording good grazing.

W. $\frac{1}{2}$ OF TOWNSHIP.—Being composed mainly of steep rocky mountains this area was not examined in detail. The land rises steeply to the west and north and south from the valley of Oregon Jack creek and all the land of importance is found in this valley. Travelling eastward from the west boundary of the township one passes through a rocky ravine and about three-quarters of a mile from the boundary one discovers about 40 acres of a flat at the foot of a rock precipice, fit for hay growing. This could be irrigated from the creek. Outside of Oregon Jack Creek Indian Reserve No. 2, this is all the land of any value agriculturally in the valley. The SW. $\frac{1}{4}$ of the township is composed of a steep mountain rising to an altitude of 6,000 feet above sea. The NW. $\frac{1}{4}$ is also steep hill but is fairly well timbered with pine and fir of medium size.

Tp. 20, R. 25, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

Little detailed examination was made of this township as almost the whole of the low lying lands in the east part are disposed of and the west part of the township is entirely composed of high hills.

The west boundary of lot 19 skirts the base of hills which rise to the west reaching an altitude of over 6,000 feet above sea at the west boundary of the township. These hills are well timbered with stretches of pine and fir to 24 inches in size with some fairly open slopes giving good grazing. Considerable open land was seen on the summits.

The northern part of the township northeast of Cornwall creek is of a semi-open nature and though timbered with pine in scattered areas affords good grazing on the higher levels. All the land in the valley of Cornwall creek rises steeply to east and west of the creek and is of no value agriculturally.

The small portion in sec. 1, south of lots 14 and 376 is steep open side hill fit only for grazing.

Tp. 21, R. 25, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

This township may be divided into two areas, one containing that part of the township west of McLean lake and Cornwall creek, and the other the whole eastern and northern part of the township.

The first part is essentially a steeply rolling and timbered area rising to the west to an altitude of about 5,000 feet above sea at the west boundary of the township. There is fair quantity of very good pine and fir to 24 inches in scattered areas throughout the centre of the southwest part. That part immediately west of McLean lake holds very little large timber though as one goes west through sec. 17 and the south part of sec. 20 fair-sized fir and pine make their appearance. In the SW. $\frac{1}{4}$ of the township some large areas of old burn are noted. These are covered with second growth poplar. There is no land of agricultural value in this area but the grazing is fairly good.

The other area comprises all of the E. $\frac{1}{2}$ of the township and most of the NW. $\frac{1}{4}$.

The greatest value in the NW. $\frac{1}{4}$ of the township is its grazing facilities. Much of the land is quite open and as a rule the grazing is excellent through all the season. Secs. 30, 31 and 32 are fairly well timbered with a very good class of fir and some scattered good pine. Immediately north of the lake secs. 20, 21, 28, and 29 comprise an area which affords first class grazing. This is nearly all open land with a fertile sandy loam soil and a good growth of grass is found throughout the season. While this land is composed of good soil its elevation is against it being of any value agriculturally. The lowest elevation noticed being that of McLean lake which is 3,480 feet above sea.

The NE. $\frac{1}{4}$ of the township ranges in elevation from about 1,550 feet at the Bonaparte river in sec. 33, to 4,000 in sec. 23. The SW. $\frac{1}{4}$ of sec. 33, the SE. $\frac{1}{4}$ of 34 and the S. $\frac{1}{2}$ of sec. 35 are all fairly open and with the exception of the land in the lower levels afford good grazing. The remainder of this area is timbered land. The timber in the east part of sec. 23 and in sec. 24 is rather of a scrub variety, as is also the timber in the creek bottom through sec. 27 but otherwise a fair quantity of fir and pine of merchantable size is found in this area.

The NE. $\frac{1}{4}$ is a good grazing area throughout. No agricultural land was noted in this area.

The SE. $\frac{1}{4}$ of the township holds good value in grazing. Nearly all of secs. 2, 3, 10, 11, 14 and 15 are covered only with scattered stretches of small timber and poplar brush among which is found an excellent growth of nourishing grasses. A few good sized trees are noticed in secs. 1, 12 and 13 but the timber in general is small and scattered. Grazing is less luxuriant on the south and east slopes.

As has been seen the greatest value in this township lies in its great areas of excellent grazing land. The timber in the north part is also worth noticing.

Tp. 22, R. 25, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

This township is traversed from north to south through the central part by the valley of the Bonaparte river and from east to west through secs. 19, 20 and 21 by the valley of Hat creek. As might be expected in a township traversed by a main road all the lands in this township of any possible agricultural value are taken up. It is chiefly remarkable for the rough and steep character of the lands to the east and west of the Bonaparte valley. Solid rock outcrop and precipices being prevalent all through the slopes to the east of the valley. There is not a great amount of timber of merchantable value. The southwest part of the township contains about two and one-half square miles of fir and bull pine from 12 inches to 30 inches. Fir and bull pine are found through the easterly part of the township in a belt following an altitude of from about 3,000 to 4,000 feet above the sea level. In higher altitudes jack pine is prevalent. The northeast part is mostly timbered, but sparsely, with bull pine and scattered fir. Grazing is fair in the higher altitudes.

SEC. 1.—Elevation, from 2,000 to 3,500 feet and over, above the sea. Steeply rolling land of no agricultural value. There is scattered bull pine in the southerly parts with fir showing in the northeast to 16 inches. Grazing is scant on the south slopes but fair in the north part.

SEC. 4, E. $\frac{1}{2}$ OF SEC. 5, E. $\frac{1}{2}$ OF SECS. 8 AND 9.—Elevation from 1,680 to 4,000 feet and over, above the sea. Steeply rolling land of no agricultural value. Open in the east part and becoming timbered as one goes west. Fir to 24 inches with a few bull pine scattered throughout the west part. Grazing is fair in the higher altitudes but scant in the valley.

SEC. 5, W. $\frac{1}{2}$, SECS. 6 AND 7 AND W. $\frac{1}{2}$ OF SEC. 8.—Elevation from 3,000 to 4,000 feet and over above the sea. No agricultural value. In general it is timbered land with a good growth of fir and scattered bull pine to 24 inches. Good grazing.

SEC. 10 (UNDISPOSED OF PART).—Elevation from 1,670 to 3,000 feet and over above the sea. A portion of the west of this area is gently sloping land of too small an area to be profitably irrigated. Remainder is rocky bluffs covered with scattered bull pine to 12 inches. Grazing is poor.

SEC. 11.—Elevation from 2,060 to 3,600 feet and over above the sea. This is of very little value of any kind. It is broken by cut banks and gullies and timbered with rather scattered bull pine and fir to 12 inches and 16 inches. Fair grazing.

SEC. 12.—Elevation from 2,740 to 4,000 feet and over above the sea. Steeply rolling country and very broken. It is timbered with rather scattered bull pine to 20 inches. Fair grazing.

SEC. 13.—Elevation nearly all over 4,000 feet above the sea level. It is timbered throughout, though mostly with useless jack pine. The grazing is fair.

SEC. 14.—Elevation from 2,800 to 4,000 feet and over above the sea level. Rough and broken land. Timbered throughout. Fir and bull pine to 20 inches. Grazing is fair.

SEC. 15.—Elevation from 1,700 to 3,500 feet and over above the sea level. No agricultural value. A small area of open grazing land in the west part, then rock precipices with scattered scrubby fir and bull pine. Grazing is rather poor.

SEC. 16.—Elevation from 1,650 to 2,500 feet and over above the sea level. A small area of open rough land, fit only for grazing, undisposed of.

SEC. 17.—Elevation from 1,990 to 3,440 feet and over above the sea level. A small flat of about 10 acres of workable land in the NE. $\frac{1}{4}$, needing irrigation. The remainder is of no agricultural value. Mostly open land. There is some scattered fir to 24 inches. The grazing is fair.

SEC. 18.—Elevation from 2,000 to 3,670 feet and over above the sea. Rising steeply to the south, contains a fair growth of fir to 30 inches, best being near the south boundary. Grazing is fair.

SEC. 19 (UNDISPOSED OF PART).—Elevation from 1,870 to 2,350 feet and over above the sea level. There is no agricultural value. Rough land, scattered with bull pine and jack pine of no merchantable value. Rather poor grazing.

PART OF THE N. $\frac{1}{2}$ OF THE TOWNSHIP EAST OF THE BONAPARTE RIVER.—Rising toward the east from an elevation of 1,700 feet above the sea at the Bonaparte river in section 28, this area reaches an elevation of 4,000 feet above the sea in the westerly parts of secs. 23, 26 and 35. The land is mostly open in the west part but very rocky and of no agricultural value. It rises toward the east at first gradually and then steeply through rocky precipices. Very little timber value is noticed. Scattered timber begins about a mile east from the Bonaparte river, and fir and bull pine to 18 inches are found in some quantity through parts of secs. 23, E. $\frac{1}{2}$ of 27 and the E. $\frac{1}{2}$ of 34. This runs into small jack pine of no value as one goes east. Grazing is fair in the higher altitudes.

SEC. 29.—Elevation, from 2,160 to 3,330 feet and over, above the sea. No agricultural value. Very steep and rocky in places. A few good fir and bull pine to 30 inches in the southwest part. The remainder is mostly open grazing land.

SEC. 30.—Elevation, from 2,300 to 3,300 feet and over, above the sea. No agricultural value. Considerable open grazing land. Scattered small bull pine.

SEC. 31.—Elevation, from 3,000 to 4,000 feet and over, above the sea. No agricultural value. Scattered fir to 24 inches. Some good grazing land.

SEC. 32 (SW. PART).—Elevation, from 2,160 to 3,300 feet and over, above the sea. Mostly timbered land of no agricultural value. Fir to 20 inches. Good grazing.

Tp. 23, R. 25, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

This township is a rough, mountainous township traversed by the valleys of Bonaparte, Scottie and Maiden creeks. There is very little land of agricultural value undisposed of therein, most of the flat, workable land being in the valley of Scottie creek in the eastern part of the township to which locality there is no access at present except by pack trail. The township is almost completely timbered land with the exception of some of the bottom lands and slopes along Bonaparte river. Considerable bull pine and fir is found and in some places of sufficient quality and quantity to be of value as a portable mill cutting. Most of the land except where extremely rocky forms a good grazing area especially in summer. Considerable fire in the vicinity of the southeast corner of this township was noted this (1911) season and damage unknown. With regard to irrigation in this township it may be noticed that on account of the extremely low fall per mile of Bonaparte river, the only stream whose waters are not

over recorded, irrigation of any land lying in altitude much higher than the Bonaparte would be prohibitively costly.

THE SW. PART IS BOUNDED BY MAIDEN CREEK AND BONAPARTE RIVER.—The elevation of this valley rises from 1,700 at the south boundary of the township to about 2,100 feet where Maiden creek cuts the west boundary. The land rises steeply from valley to the south and west to an elevation of 4,000 feet above the sea level.

This area contains no agricultural land except a few small flats on the south boundary of the township about sec. 5; these, however, could not be irrigated. As far as timber is concerned, this area follows the general rule of this locality. In the immediate neighbourhood of Bonaparte river the land though steeply rolling is sparsely timbered, but from one-half to one mile back from the creek the timber becomes fairly thick, being composed of bull pine and fir of medium size. In the north part of sec. 18 and south part of 19 the land is not open as it is mostly along the Bonaparte, but is timbered close to the creek, fir of medium size being fairly abundant. In the extreme southwest part the timber is of poorer quality, though not so much jack pine is found as is generally expected at this altitude.

This is a good grazing area, especially in the south part where the land is more open. Abundance of pine grass is found with some bunch grass.

SE. PORTION BOUNDED BY BONAPARTE AND SCOTTIE CREEKS.—Rising from an elevation of 1,700 feet at the south boundary of the township, the valley of Bonaparte and Scottie creeks reaches an elevation of about 3,000 feet at the east boundary. The land to the south and east of this valley rises almost without exception precipitously from the creek bed and continues rising to the south and east to an elevation of 4,500 feet above the sea in the southeast corner of the township. With the exception of lands already disposed of no lands of agricultural value were met with. A range of scattered fir and bull pine of medium size is met with following an area of approximately equal elevation through sections 3, 10, 15, 22, 23 and 24. This timber increases in size somewhat as one rises in elevation, but in sections 1 and 12 runs out into jack pine, the bull pine and fir disappearing altogether. Except in the lower altitudes where the heat has destroyed most of the grass and among solid rock outcrop, grazing is fair throughout this area.

NW. PORTION BOUNDED BY MAIDEN CREEK AND BONAPARTE RIVER.—Elevation from about 1,750 to about 3,200 feet above the sea. This, with the exception of a small portion in the NW. $\frac{1}{4}$ of sec. 29, is very steep, rising from both creeks to a summit in sec. 30. Rather lightly timbered on the slopes with considerable bunch grass, but with a range of medium-sized fir and bull pine on the summit through the north of sec. 19 and most of sec. 30.

SEC. 22, NORTH OF SCOTTIE CREEK.—Elevation from about 2,200 to 2,800 feet above the sea. The land is steeply broken and rolling. No value except scattered timber, and grazing.

SEC. 23, NORTH OF SCOTTIE CREEK.—Elevation from 2,600 to 3,200 feet above the sea. A small portion of workable land in the east part along Scottie creek covered with medium-sized bull pine and fir; needs irrigation. Grazing is fair.

SEC. 24, NORTH OF SCOTTIE CREEK.—Elevation, from 2,800 to 3,500 feet, above the sea. There is some level workable land in this area of from 5 to 20 chains in width along Scottie creek, this land might be worked if cleared and irrigated. It is of light sandy loam soil and is timbered with fir and bull pine of medium size. Grazing is fair.

SEC. 25.—Elevation, from 3,200 to about 4,000 feet above the sea. No agricultural value. A moderate amount of good fir and bull pine to 24 inches but hardly in commercial quantity. Grazing is good.

SEC. 26.—Elevation, from 2,550 to 3,400 feet above the sea. There is a flat in the centre of this section and along the creek, of farmable land needing irrigation.

There does not appear to be any adequate source of irrigation for this land. It is nearly all covered with a good grade of bull pine and fir to 24 inches. Grazing is fair.

SECS. 27 AND 34 AND REMAINING AREA BETWEEN THESE SECS, SCOTTIE CREEK AND BONAPARTE RIVER.—This area is almost totally without agricultural value. The land with the exception of a few small benches east of Bonaparte river rises steeply to a summit in secs. 21, 28, 33, and 34 at about 3,400 feet above the sea. Such flats as are found among the heights are of such position as to make profitable irrigation impossible. This area is almost completely timbered with scattered medium sized bull pine and a few fir. Rocky and rolling land, it is useful for little but grazing; which is rather fair on the heights.

SEC. 29.—The NW. $\frac{1}{4}$ holds probably 40 acres west of Bonaparte river at an elevation of 1,800 feet, above the sea, that could be cleared and worked. The area may be too small alone for one holding. There is considerable brush and scrub on it.

SEC. 35.—Elevation, from 3,000 to 3,300 feet, above the sea. Some fairly flat, sandy loam land in this section, but absolutely no source of profitable irrigation. Mostly timbered with fir to 24 inches and jack pine. There is abundance of pine grass.

SEC. 36.—Elevation, from 3,000 to 4,000 feet and over above the sea. Rising rapidly to the east. No agricultural value. Fir to 24 inches in some quantity running into old burn at the eastern boundary. There is pine grass.

Tp. 24, R. 25, W. 6th Mer. (Fractional.) *A. V. Chase, D.L.S., 1911.*

SECS. 1 AND 2.—Elevation, from about 3,000 to 4,000 feet, above the sea. These areas have no land of agricultural value on account of the lack of water. Sec. 2 holds some flat workable land of sandy loam soil but profitable irrigation is impossible. Timber is composed of a considerable amount of small jack pine in the centre of sec. 2, running into bull pine in the west and some fir in sec. 1 though all of very doubtful merchantable value.

Tp. 11, R. 26, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

This township is traversed from north to south by the valley of the Fraser river, which is flanked on either side by steep mountainous hills covered with timber. The only lands showing agricultural possibility lie in the lower levels, being as a rule less than 500 feet above the water level of the river. They are in general bench lands of a sandy loam soil, in some cases rather gravelly and stony.

SECS. 1 AND 2 (East of the Fraser river).—Rising from the river level through steep rocky hills, these sections are timbered with small-sized fir and bull pine, fir predominating. There is a small amount good for ties.

SEC. 2 (West of the Fraser River).—Elevation about 1,000 feet and upwards. All steep side hill. Second growth fir, poplar and birch. Practically no grazing.

SEC. 3.—Rising to the west to steep mountains. Timbered land. No commercial value.

SEC. 10.—All steep side hill with a few small rocky benches. Mostly second growth birch, fir and alder in thickets. No commercial value.

SEC. 11.—The NW. $\frac{1}{4}$ contains two benches at 500 feet and 600 feet elevation respectively. That at 500 feet being an area of 30 to 40 acres between the C.P. Ry. and the Fraser river. This more or less cleared with a sandy loam soil and is suitable for fruit, but would need abundant irrigation on account of its somewhat sandy nature. The upper bench is rather irregular and the soil is rather sandy. It would need abundant irrigation. Its area is about 15 acres. The remainder of this quarter is steep timbered land of no agricultural value.

The SW. $\frac{1}{4}$ is irregular with small benches thickly covered with young growth.

In the NE. $\frac{1}{4}$ there are two small benches in the north part of a combined area of 15 acres, at an elevation of 500 feet to 700 feet. These are good for almost any kind of agriculture, having a sandy loam soil.

The remainder of the section is rocky and steep with some tie timber in fir. Poor grazing throughout.

SECS. 12 AND 13.—All steep rock hill. Practically no commercial value.

SEC. 14.—Elevation from river level to 1,400 feet. A strip of excellent bench land runs parallel to the river on the east side throughout this section, varying in width from 3 to 25 chains. It is mostly good, clean loam and sandy loam soil and should make good fruit land. It is covered mostly with a dense growth of young fir. This piece is of course with the exception of Boston Bar Indian Reserve No. 4. That part of the flat adjoining the south boundary of the SE. $\frac{1}{4}$ has been improved and fenced by Indians, most of it being cleared.

West of the river there is a small area of bench land in the NW. $\frac{1}{4}$. It is gravelly soil and rather rough.

The remainder is steep rocky hill covered with a growth of young fir, birch and alder. Practically no grazing.

SEC. 15.—Elevation from 540 feet in the northeast part to steep mountain in the southwest. About 80 acres in the NE. $\frac{1}{4}$ is fairly good fruit land. The soil is a rough, dark loam and mould with a sandy subsoil, the whole containing much small stone. Nearly all the section is covered with a growth of young fir, birch and alder. A few good-sized trees in the west part. The remainder of the section presents no agricultural value and no grazing. Water is available for irrigation purposes.

SEC. 22 (Portion vacant).—No agricultural value. All timbered land with small growth in the southwest part and scrub fir and pine in the northwest.

SEC. 23.—Elevation from river level to about 2,000 feet. A small bench of 15 acres lies west of the Fraser river in the SW. $\frac{1}{4}$. It is of sandy loam soil and rather rough and of little value agriculturally.

East of the river some small flats exist in the south part, a cabin has been erected and a small amount of clearing done, though there does not appear to be any entry on this area. The small flats are fit for fruit growing. All timbered land, 16-inch to 18-inch fir being in some quantity in the south part. The north part of the section is very rough and of little value.

SEC. 26.—All rocky hill timbered with small fir and a few bull pine.

SEC. 27.—Elevation from river level to 1,300 feet. All steep timbered side hill of no commercial value.

SEC. 28.—Elevation from 510 feet in the northeast part to over feet in the southwest part. Almost wholly rock hill. Thick undergrowth of fir, birch and cedar.

SEC. 29.—Elevation from 1,300 feet up. Steep, rough, hilly and rocky land. No commercial value. Nearly all covered with dense small growth.

SEC. 32.—Elevation from 900 feet up. There is one small bench of fruit land near the centre of the east boundary, about 10 acres in extent. It is dark sandy loam soil and there is some growth of underbrush. The remainder is steep rocky land all more or less covered with a dense growth of small fir, willow and birch.

SEC. 33.—Elevation from river level to about 1,300 feet. The NW. $\frac{1}{4}$ contains about 20 acres of land suitable for fruit, west of and adjoining the C.P. Ry., at an elevation of 600 feet. This has apparently been homesteaded, although no entry appears.

The SW. $\frac{1}{4}$ contains about 40 acres of good bench land of dark, sandy loam soil with some surface stones. It is all timbered with a thick growth of alder, willow, fir and birch.

The NE. $\frac{1}{4}$ is all high mountain timbered with small-sized pine and fir.

SEC. 34.—In the NW. $\frac{1}{4}$ of this section are a few small flats of a combined area of about 10 acres at an average elevation of 1,000 feet above the sea. These are occupied by Indians, partly improved, and in some cases cultivated. The remainder of the section is very rough and rocky and covered with fir and bull pine to 18 inches. Practically no grazing.

SEC. 35.—This section rises steeply to the east with no commercial value to speak of.

The remainder of this township is composed of high timbered hills, and was not examined in detail.

The timber on these areas is not of value commercially except in a few areas where it is fit for railway ties.

Tp. 12, R. 26, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

This township is traversed through the westerly part from north to south by the valley of the Fraser river and all lands of agricultural possibilities lie in the valley at no great distance from the river. Outside of such small benches as exist thus, the land is chiefly rocky timbered hills of almost no value.

It is claimed that the lands in the vicinity of the south boundary of this township have a much more severe winter than either the lands to the north in the vicinity of Lytton or the lands to the south in the vicinity of Yale. The writer was informed that apple growing has been attempted several times on lot 3 in sec. 9, without success in spite of the elevation which is only 1,000 feet above the sea. An exceptional depth of snow in winter is also recorded here. This also applies to similar areas as far north as the centre and NW. $\frac{1}{4}$ of section 16 where a good sized meadow exists. This meadow which is at an elevation of 1,350 feet above sea is claimed to be good for nothing but hay and a few of the hardier vegetables.

This information was furnished by the chief of the Indians residing in the locality and is not vouched for by the writer. It is hardly consistent with the state of affairs across the river where a flourishing orchard was found at an elevation only slightly lower than these.

SEC. 3.—In the SW. $\frac{1}{4}$ and part of the NW. $\frac{1}{4}$ not included in Boothroyd Indian Reserve No. 5 are found a number of small clearings at an elevation of 1,200 to 1,300 feet. Probably 40 acres altogether are fit for cultivation, having a clay loam soil. Otherwise the section is all timbered land with some value for ties. Very rough and rocky.

These lands are occupied by Indians and a small amount of improvement has been done, clearing and fencing.

SEC. 4 (E. OF THE FRASER RIVER).—A fairly good bench about 10 to 15 chains wide of sandy clay loam soil runs parallel to and adjoining the river in the W. $\frac{1}{2}$. There is an area of about 75 acres here at an elevation of 600 feet above sea giving agricultural possibilities. It is somewhat stony but should do well under fruit. Most of the W. $\frac{1}{2}$ is covered with a good growth of fir to 18 inches making excellent tie timber. This timber has been taken notice of by contractors.

The SE. $\frac{1}{4}$ contains a large flat bench of about 40 acres running in the form of a strip through the quarter. A sandy loam soil covered mostly with a dense growth of small fir and pine it does not appear to have ever been developed or improved. It will likely need water in irrigation.

SEC. 5 (PART W. $\frac{1}{2}$ UNDISPOSED OF).—About 100 acres in this area is good bench land at an elevation of 800 feet above sea. It is composed chiefly of sandy loam soil almost no clay showing. About 5 acres are cleared but the remainder is somewhat densely covered with a small growth of fir, birch and alder, particularly in the south part.

The remainder of the vacant lands in this section are very rough and mountainous, showing only a few fir to 18 inches. Practically no grazing.

SECS. 6 AND 7.—Rise from the level of Nahatlatch creek to the southward through a very mountainous country and present no land of agricultural value. Most of these sections are included in timber berth 428 which covers all the merchantable timber. Poor grazing.

SEC. 8.—The south part of this section is composed almost entirely of rocky cliffs with only scattered scrub timber.

The NE. $\frac{1}{4}$ contains two small benches, one of 30 acres, above the Canadian Pacific railway and one of 4 acres below, at elevations 620 and 520 feet respectively. The upper bench is good sandy loam soil but is very rough and rocky. It is timbered with small second growth fir and willow. The lower bench is also rocky and is timbered with fir 8 inches to 12 inches in size. These should do well under fruit.

The remainder of the unsettled lands in this section is too rough for agricultural purposes and is timbered with dense small growth of fir, willow, etc. There are a few fir to 18 inches. Practically no grazing.

SEC. 9.—The elevation of the greater part of this section is from 1,000 feet to 1,200 feet above sea.

The SW. $\frac{1}{4}$ and the N. $\frac{1}{2}$ show little value being steeply broken in the SW. $\frac{1}{4}$ and mostly rock hill in the N. $\frac{1}{2}$.

The SE. $\frac{1}{4}$ contains considerable good agricultural land over most of its area. It is a rich brown loam and very free from rocks. It is, however, subject to the local weather conditions mentioned in the general description of this township. It is thickly timbered with small fir, pine, cottonwood and birch. Very scanty grazing. About 5 acres of this area is cleared and it is occupied by Indians. There are a couple of small buildings.

SEC. 10 (N. $\frac{1}{2}$ AND SE. $\frac{1}{4}$).—This area is mostly up in the rocky hills and presents little value except for the timber, some of which is good for ties.

SW. $\frac{1}{4}$.—From 1,450 feet rises eastward to about 2,000 feet at the east boundary. There is not much land of value in this area. A bench just southwest of the centre of the section contains about 20 acres of dark loam soil. There is also a small clearing in the southeast part of the quarter running into the southeast quarter.

All of this area is densely timbered with small cedar, pine and willow.

SEC. 16.—Elevation averages 1,350 feet for the main centre area. This section contains a fairly large area of agricultural land in the central part and the northwest quarter. It is composed mainly of a rich black mould surface running to sandy loam in the north part, and is about 80 acres in extent. There are a couple of small buildings and clearings and a little fencing has been done. This area is timbered mainly with second growth fir, alder, etc., but in the northwest quarter is found a considerable growth of fir to 18 inches. Practically no grazing land.

SEC. 17.—With the exception of a small stony bench in the SE. $\frac{1}{4}$ west of the Fraser river, the undisposed of lands show no agricultural value. The timber is mostly scrub and second growth fir, willow, alder and birch. No grazing.

SEC. 18.—Elevation from 500 feet to 1,200 feet. This section is on the divide between the Fraser and Nahatlatch rivers, the land rising steeply from each to the summit.

There is a small coulee in the north part of the NW. $\frac{1}{4}$ extending into sec. 19. It is good ground, but has no source of irrigation. It is covered with small cedar and spruce.

The remainder of the section is too steep for agriculture. There are a few large fir, but the general run of timber is small second growth fir, willow, etc. Scant grazing.

SEC. 19.—Elevation from river level to about 1,400 feet. A small coulee in the SW. $\frac{1}{4}$ is the extension of that in section 18. There appears to be no source of irrigation for these areas. The remainder is steep side hill with second growth fir, alder and birch. Scant grazing.

SEC. 20.—In the SW. $\frac{1}{4}$, west of the Fraser river, there is a small bench at an elevation of 500 feet that is an abandoned homestead. There are improvements to the value of about \$350.00. The agricultural value of this piece is small, being stony ground.

East of the river in this section is a very rough area. There is a small bench in the southwest part of the NE. $\frac{1}{4}$, with a little clearing and fencing done. It is

suitable for hay growing, but is too small to be considered as a homestead for one person.

Fir and bull pine, rather small and scrubby, with a good deal of dense underbrush. Poor grazing.

SEC. 21.—About 40 acres of the SW. $\frac{1}{4}$ is fair agricultural land, with a loamy soil and considerable hard sand mixed. Its elevation is 1,400 feet above sea, and it should be suitable for fruit. There is a considerable growth of small fir and pine to 16 inches.

The remainder of the section is rough and rocky timbered land but the timber is not of merchantable value. Scant grazing.

SEC. 29, 30 (PART VACANT), 31 AND 32.—There is a piece of bench land running nearly parallel to the Fraser river through the E. $\frac{1}{2}$ of sec. 31 and the NW. $\frac{1}{4}$ of sec. 29. It varies in width throughout from three to ten chains and contains about 75 acres altogether. With the exception of a small area in the north of sec. 31 this area is covered with stones on the surface and would be exceptionally hard to work except as fruit land, though the soil is fairly rich. It is densely covered with small fir over most of its area, with a few stretches of trees to 18 inches. Its elevation averages 700 feet.

There is also a small rocky bench in the SW. $\frac{1}{4}$ of sec. 29 which could be utilized for fruit growing. It contains about 10 acres of sandy loam soil at an elevation of 500 feet above sea, with the surface rather stony.

The remainder of these sections presents no agricultural value. West of the Fraser river the land rises steep and irregular from the water level and is covered with second growth fir, cedar, willow, &c., on old burn. East of the river the formation is still more irregular and a good deal of solid rock is seen. It is covered with small fir and pine with considerable undergrowth.

The remainder of this township is not included in detail examination but is classed as timbered land having no commercial value.

Tp. 13, R. 26, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

This township is composed almost wholly of rocky timbered mountains and with the exception of a couple of small areas in the extreme west part, is of no commercial value.

SEC. 6.—A small narrow strip of bench land is found in the SW. $\frac{1}{4}$ immediately south of lot 14A. Not over five acres of land here show agricultural possibilities. It is deep sandy loam soil rather irregular as to surface and could be used in conjunction with lands to the south. Its elevation is 700 feet.

SEC. 19.—There is a small strip of bench land along the west boundary of the NW. $\frac{1}{4}$. This area is about 10 acres in extent and is composed of good dark sandy loam soil lying at an elevation of 1,350 feet, suitable for any kind of agriculture. It is covered with fir to 16 inches and a dense growth of underbrush.

SEC. 30.—A small stony bench in the southwest part of this section is of small agricultural value. It is covered with dense young pine and fir.

The remainder of the township is very rough and broken totally unfit for agriculture except in extremely small and isolated areas. The eastern part is entirely rocky mountains with the whole more or less timbered with scattered small sized fir and pine, and dense underbrush of cedar, willow, &c., in the lower altitudes. Grazing is practically negligible in this township.

Tp. 15, R. 26, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

This township is traversed from east to west by the valley of the Thompson river, and from north to south through its west part by the valley of Botanie creek. Each valley is flanked by steep rocky hills, and together they contain all the land of agricultural value in the township. The major portion of the township is composed

of the Scarp mountains in the east part, and the Lytton mountains in the south part. Each are of rocky formation and support little vegetation of any kind. Practically no undisposed of land in the township has agricultural value without irrigation, and on account of the sandy nature of the soil a good supply of water is needed.

SECS. 1 TO 5.—This area is all rocky mountain side and very little of it has any amount of surface soil. There is a quantity of pine and fir in this area at various points but its inaccessibility detracts from its monetary value. Grazing is good on some benches, but these are likewise very inaccessible.

SEC. 6.—Elevation from 460 feet to 1,690 feet. The NW. $\frac{1}{4}$ is composed chiefly of rolling areas of stony and gravelly soil. No agricultural value. It is covered with young bull pine from 6 inches to 8 inches. No grazing.

The E. $\frac{1}{2}$ is well up into the hills, and consists of a steep gravelly and stony slope covered with young bull pine and fir with a few large trees. No agricultural value; scant grazing.

SEC. 7 (PART NORTH OF THE THOMPSON RIVER).—Elevation from 500 feet to 1,500 feet. The northwest part slopes steeply toward the Thompson river. Some rock slides; soil, a light sandy loam where visible. A few large bull pine, but a great many have been cut.

The northeast part contains about 10 acres of clean sandy loam soil adjoining the mouth of Botanie creek. This is about 200 feet above the river, and very difficult to irrigate. It is sparsely covered with young pine.

The remainder of the section is steeply sloping timbered land on which the merchantable timber has been cut. Poor grazing.

SEC. 8.—Elevation from 500 feet to 2,000 feet. In the NW. $\frac{1}{4}$, North of the Thompson river, is an area of about 10 acres of fruit land. The soil is sandy loam, but rather stony. There is very little timber.

In the NE. $\frac{1}{4}$ there are several small benches aggregating about 20 acres of fair fruit land. The soil is a light sandy loam, rather rocky in places. It is so placed as to be rather difficult to irrigate.

The remainder of the section is chiefly rocky slopes, the mountains proper rising from points about 15 chains south of the north boundary of the section. There is some good pine from 12 inches to 20 inches, and the grazing is fair.

SEC. 9.—Elevation from 520 feet to 2,000 feet. The north half is chiefly rocky bench land of very little value agriculturally. The mountains proper rise to the south from points about 20 chains south of the north boundary of the section. It is well timbered with fir to 20 inches. Fair grazing.

SEC. 10.—Elevation from 540 feet to 2,000 feet. All of the section north of the river is rough rocky hills with only scattered timber, principally bull pine 10 inches to 15 inches. Grazing is scant.

The NW. $\frac{1}{4}$ south of the river contains a flourishing orchard in L.S. 11, to the extent of about 8 acres. This is the only part south of the river that is of any value agriculturally. The remainder is rough and broken country timbered with small and medium sized pine and fir. Poor grazing.

SEC. 11.—Elevation from 560 feet to 1,800 feet. The part north of the river is all rocky hill covered with scattering pine.

The NE. $\frac{1}{4}$ contains about 6 acres of bench land above the Canadian Pacific railway at an elevation of 1,200 feet. It is sandy loam soil and has been cleared of timber. Irrigation would be costly.

Otherwise the section is rough, broken and mountainous. It is timbered throughout with a medium and small sized pine and fir. Grazing poor.

SEC. 12.—Elevation from 560 feet upwards. In this section the land rises steeply from the water's edge of the Thompson river toward the Lytton mountains on the south. It is all rocky formation and very broken as to surface. The timber is pine

and fir 15 inches to 18 inches but much of it almost inaccessible. Considerable good bunch grass area is also existent.

SECS. 13 AND 14.—Elevation from 560 feet upwards. All rock hill but with much less timber than lands south of the river. Grazing scant.

SEC. 15.—Elevation from 540 feet up. The SE. $\frac{1}{4}$ contains a small bench, about 12 to 15 acres, of sandy soil with a showing of rock. It would be extremely difficult to irrigate being at an elevation of 1,250 feet. Otherwise the section is very rocky and rough. Timber is almost negligible, scattered small pine being the rule. Scant grazing.

SEC. 16.—Elevation from 520 feet to about 2,000 feet. South of the Thompson river the land rises steeply toward the south through stony slopes timbered with bull pine and a few fir. Much of the bull pine has been cut for use in connection with construction camps for fuel.

North of the river the section is composed of steep rock side hill with scattered small pine. Practically no grazing.

SEC. 17.—Elevation from 500 feet to about 1,500 feet. The SW. $\frac{1}{4}$ of this section contains almost 40 acres of good bench land fit for fruit. It is a good loam soil with a mixture of stones and sand, though in the northerly part the stones are of small consequence. It is partly cleared and improved and has some substantial buildings on it. It is timbered with pine to 15 inches.

The N. $\frac{1}{2}$ is steep, rising to the north through gravelly slides in the west part and solid rock in the east. Timber is mostly bull pine of poor quality. Grazing poor.

The part south of the river is steep rolling side hill timbered with small pine and fir. Fair grazing.

SEC. 18.—Elevation from 1,890 feet to 2,140 feet. The east half is all steep side hill timbered with small pine and fir. Poor grazing.

Part of the NW. $\frac{1}{4}$ is sloping land with a rocky dry soil. Its agricultural value is small, but this land might be made use of in fruit with abundant irrigation.

There is also a small strip in the SW. $\frac{1}{4}$ south of the Indian reserve that might be made use of in this manner. Its soil is very sandy and would need abundant irrigation.

This section is timbered with pine and fir from 12 inches to 24 inches. The grazing is poor throughout.

SEC. 19.—Elevation from 1,300 feet to about 2,300 feet. The NW. $\frac{1}{4}$ is a high rocky hill.

A small area along the south boundary of the SW. $\frac{1}{4}$ is sloping land with a west exposure. The soil is rather rocky and apparently of small agricultural value, but might prove fertile in fruit with abundant irrigation.

That part of the east half still undisposed of is chiefly steep side hill.

These lands are timbered throughout with some fair bull pine to 18 inches and a few scattered fir. The grazing is poor.

SEC. 20.—This section rises from 1,300 feet at Botanie creek to the Scarped mountains on the east. The land is very rough. It is timbered with good bull pine to 24 inches. The grazing is poor.

SECS. 29 AND 32 (PARTS VACANT).—Elevation from 1,650 feet upwards. Nothing of agricultural value was found in this area. The land rises to east and west from Botanie creek through open bull pine country. The grazing is scant.

SECS. 30 AND 31.—The undisposed of land in these sections is chiefly steep rocky side hill, timbered with a good quality of pine and fir. Very little grazing.

Tp. 16, R. 26, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

Botanie creek flows south through this township about one and one half miles from the west boundary. Its valley is narrow and flanked by steep rocky hills. The valley of Skoonka creek, which flows easterly through the north part of the township,

is also very narrow. The chief resources of this township are its grazing possibilities and its timber.

SEC. 5 (SW. $\frac{1}{4}$ AND E. $\frac{1}{2}$).—Elevation from 1,900 feet up. The SW. $\frac{1}{4}$ contains considerable area of fairly level sandy loam land fit for mixed farming. It is rather open in places, but the greater portion of it is timbered with fir and bull pine to 18 inches, with a dense undergrowth of young fir and willow.

The E. $\frac{1}{2}$ rises steeply from Botanie creek through rocky slopes. It is particularly rough, and in the lower levels the timber is scrubby. Very little value of any kind.

SEC. 6.—Elevation from 1,980 feet to 4,000 feet.

The SE. $\frac{1}{4}$ contains from 10 to 15 acres of bottom land along an old dry creek. The soil is of poor quality and would need abundant irrigation.

The remainder of the section slopes steeply to the westward. The section is wooded throughout with scattered fir and pine and a thick undergrowth of fir, spruce, willow and dogwood. Poor grazing.

SEC. 7.—Elevation from 2,600 feet to 3,830 feet.

A rough section covered with a thick growth of small fir, spruce, willow and dogwood. Very little value of any kind.

SEC. 8.—Elevation from 2,400 feet to 3,000 feet. This land is rough and hilly with practically no agricultural value. A strip of land in the centre of the section in the vicinity of Botanie creek from 10 to 20 chains wide is thickly timbered with fir, spruce, hemlock and cedar 10 inches to 30 inches. Fir and hemlock predominate making good tie timber. Poor grazing.

SEC. 17 (E. $\frac{1}{2}$ AND SW. $\frac{1}{4}$).—East of Botanie creek this section rises steeply through broken rocky slopes towards the summit of the Scarp mountains. The timber is without value.

West of the creek the land is hilly and rises gradually to the west. It is of no agricultural value being rocky and rough. This part contains some very good fir spruce and hemlock to 30 inches, making good tie timber. Scant grazing.

SEC. 18.—Elevation from 2,850 feet to 4,000 feet. The SE. $\frac{1}{4}$ is fairly level with a dark sandy loam soil, but the soil is very low grade and even with irrigation would not prove very productive.

The SW. $\frac{1}{4}$ contains a small pond surrounded by a strip of good hay land. Outside of this area the land is rather too hilly for agricultural purposes.

The N. $\frac{1}{2}$ is generally rough and broken with no agricultural value.

Timber is of small size throughout and there is an abundance of young fir, spruce, cedar and willow. Scant grazing.

SEC. 19.—Elevation from 3,200 feet upwards. Very steep and rough. The timber is small and with much underbrush. Grazing fair.

SEC. 20.—Elevation from 2,800 feet to about 4,000 feet. A strip of timbered land 10 to 20 chains wide, along Botanie creek is the only value in this area. Good fir, spruce and hemlock fit for ties are found. No agricultural value. Scant grazing.

SECS. 29 TO 31 (NOT INCLUDED IN INDIAN RESERVE).—Elevation from 3,400 feet upwards. These sections are all steep side hill or summit. Timber is rather scarce except to the east of Botanie creek where dense young fir and spruce are found. An excellent grazing area west of the creek.

NE. PART OF THE TOWNSHIP.—The valley of Skoonka creek runs easterly through this area and is a steep gulch flanked by fairly steep side hills. There is no agricultural land here. The south side of the valley is thickly timbered with fir and spruce to 16 inches but on account of its inaccessible position is of small value.

The north side of the valley presents an almost unexcelled grazing area in its higher altitudes. Scattered large bull pine are seen as well as a great deal of underbrush but not sufficient to interfere with the excellent grazing.

The elevation averages from 3,500 feet upwards.

SOUTHEAST PORTION OF THE TOWNSHIP.—The whole of this area is taken up by the Scarp mountains. Very little value in timber is found though quantities of scrub fir and pine are seen. There are many excellent grazing areas on these hills.

The importance of Botanie lake as a reservoir for irrigation purposes should be noted here. A great quantity of water goes to waste yearly through Botanie creek to the south and through Skoonka creek to the east. By a dam at the south end of Botanie lake and a creek diversion bringing the waters, that at present drain east through Skoonka creek, into the lake, a supply could be obtained sufficient to irrigate most of the workable lands in the Botanie creek valley and east of the Fraser river in township 15, range 27.

Tp. 17, R. 26, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

Seventy-five per cent of this township is composed of steep, rocky mountains, and nearly all of the remainder is included in Botanie Indian reserve No 15. There are some good grazing areas immediately east of the Indian reserve in the south part. These lands are fairly open or timbered with stretches of small poplar.

East of Pasulko lake the land rises rapidly to the east, attaining an elevation of 4,000 feet above sea within one-half mile from the shore. Most of the lower land is timbered, but in higher altitudes the land is more open giving some good grazing areas. Solid rock outcrop is also much in evidence.

Southwest of Pasulko lake the land is also very steep. This part is mostly timbered hills with little value of any kind. There is considerable old burn. There are some good grazing areas on the summits west of the reserve.

The north boundary of the reserve was not found, so it was impossible to tell whether certain lands in section 19 were within the reserve or not. These lands are composed of a small area of workable soil that might be utilized for growing hay. The elevation is about 3,800 feet.

The north part of the township through sections 29 to 31 is a very rough area and was not examined in detail. It is generally timbered land with no merchantable value of any kind.

Tp. 19, R. 26, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

The principal land of note in this township is found in the valley of Hat creek, which flows northerly through the west part of the township. There is a pass in the north part which provides an outlet for a trail to the east through the valley of Oregon Jack creek, but this pass is narrow, rugged and steep. The valley of Hat creek is fairly well settled, lands having been homesteaded at elevations that would suggest failure even in hay crop. It is a question what success in agriculture will be met with in this valley in township 19. While the elevations run to over 4,000 feet in the south part it must be admitted that local conditions as regards temperature are very favourable when contrasted with those of other localities. Outside of this valley the township is very rough.

SE. $\frac{1}{4}$ OF THE TOWNSHIP.—This area is in the Hat Creek Forest reserve and is very rough, being composed of timbered hills rising to an elevation of 5,500 feet above sea. It is very rocky, contains much old burn, and presents little value of any kind. It was not examined in detail.

NE. $\frac{1}{4}$ OF THE TOWNSHIP.—A valley traverses the south part of this area, providing a pass to Oregon Jack creek valley in the township to the east. This valley is little better than a steep narrow gulch, particularly towards the east boundary of the township. Some marshy flats are noticed, but these are somewhat completely flooded with water which flows through this valley for irrigation purposes. Lands to the south rise steeply through a rock formation and are of small value. To the north a considerable area of excellent grazing land is noted, particularly in sections 27 and 34. This land is only partly open, being covered with scattering pine and fir, with ranges

of poplar. Some good stretches of pine are seen in the east part, but all in a rather inaccessible position. There is no agricultural land.

SW. $\frac{1}{4}$ OF THE TOWNSHIP.—The main valley of Hat creek lies in this area, and is fairly well settled. In fact, no lands were found in this area undisposed of at an elevation less than 4,000 feet above sea; the lowest elevation recorded in lands still open for settlement was 4,150 feet in the SE. $\frac{1}{4}$ of sec. 18. At these elevations even in this valley it is safe to classify all the land as other than agricultural. The land is all timbered, but practically no lumber value was found. The south part of sec. 8, sec. 7, and sec. 18 contain a great deal of thickly placed small jack pine. Secs. 9 and 16 are very rough and rocky timbered land of no value except for a few benches that offer good grazing.

SEC. 19 (W. $\frac{1}{2}$).—Elevation from 3,980 feet to 4,280 feet. It is swampy land with small growth of pine and poplar in the south and fairly open grazing land in the north centre. The northwest corner of the section is fairly thick timber of jack pine and poplar. Poor grazing.

SEC. 20 (PART UNDISPOSED OF).—A few acres of flat in the valley might grow hay though stony land. The remainder is steep side hill with fair-sized fir on the heights. Some good grazing.

SEC. 21.—Principally steep rocky mountains rising to the south. No agricultural value. No detail examination made.

SEC. 28.—Elevation from 3,800 feet to 5,000 feet. There is a small strip of land along the shore of a lake in the south part which might grow hay. The remainder rises quickly to the north through high rocky bluffs. Small timber of fir and poplar. Much good grazing land.

SECS. 29 (PART E. $\frac{1}{2}$), 32 and 33.—There is no agricultural land in this area. The land rises quickly from Hat creek and Jack creek to a summit in the northeast of sec. 33 of over 5,000 feet. Good timber value was found only in the northeast part of sec. 33, running out quickly as one goes south. Secs. 29 and 32 contain a great deal of excellent grazing land. Scattering timber only in the southwest part of this area. A great deal of poplar in groves.

SEC. 30 (W. $\frac{1}{2}$).—Elevation from 3,850 feet to 4,100 feet. The west part of this area is covered with scattering timber, but the east part is semi-open grazing land. There is no agricultural value. Merchantable timber is practically absent.

SEC. 31 (W. $\frac{1}{2}$).—Elevation from 3,750 feet to 4,100 feet. Semi-open rolling land with scattering timber somewhat more thickly placed along the west boundary of the section. Grazing fair.

Tp. 20, R. 26, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

The chief resource of this township is its great area of excellent grazing land. Practically the whole west half of the township is adapted to the summer feed of stock. As the land is nearly all steeply sloping it has little value as agricultural land even in those places where the soil is workable. The east half of the township is fairly well timbered throughout but little detailed examination was made of this area on account of its general high elevation.

SE. $\frac{1}{4}$ OF THE TOWNSHIP.—The average elevation of this area would exceed 4,000 feet above sea and as such need not be considered as having any agricultural value. This area lies within the Hat Creek Forest reserve and is nearly all timbered land. Its timber is bull pine and fir of medium size with a large number of open spaces on the summits. The grazing is fairly abundant throughout on timber grass.

SECS. 4 AND 5.—Elevation from 3,750 feet to over 4,000 feet. Sec. 4 and the eastern part of sec. 5 are timbered land. Fir of good size is met with in some quantity in sec. 4, but runs out into small growth and poplar groves in sec. 5. The centre and west part of sec. 5 is all open grazing land on steep side hill.

SEC. 6 (S. $\frac{1}{2}$ AND NE. $\frac{1}{4}$ EXCEPT LOT 1,072).—Elevation from 3,600 feet to 3,990 feet. The NE. $\frac{1}{4}$ contains about 5 acres of workable sandy loam soil which would need irrigation. The remainder of the E. $\frac{1}{2}$ is open grazing land on steep side hill.

The E. $\frac{1}{2}$ of the SW. $\frac{1}{4}$ is fenced in and apparently settled on. The W. $\frac{1}{2}$ is sloping grazing land with scattering bull pine of good size.

SEC. 7 (E. $\frac{1}{2}$ AND PART SW. $\frac{1}{4}$).—Elevation from 3,320 feet to 3,940 feet. The E. $\frac{1}{2}$ is rather hilly and rocky grazing land with a little scrub timber.

The SW. $\frac{1}{4}$ is all open grazing land.

SECS. 8 AND 9.—No agricultural value. These sections are all grazing land with a little scattered timber in the east part of sec. 8 and stretches of fir and pine in sec. 9.

SEC. 16.—Elevation all over 4,000 feet. Good open grazing lands with stretches of fir and poplar.

SECS. 17 TO 20 (UNDISPOSED OF PARTS).—Elevation from 3,350 feet to over 4,000 feet. This area is essentially grazing land. It is fairly open, very sloping and generally steep. The soil is nearly all workable but the lower levels suitable for dry culture are too rough in outline. A few isolated clumps and stretches of pine, fir and poplar are seen but not sufficient for this to be classified timbered land.

SEC. 21.—Elevation from 3,860 feet to over 4,000 feet. A little more timber is in evidence here, though only in stretches of small growth poplar, etc. Good grazing land.

SEC. 28.—Elevation over 4,000 feet. This section is fairly open and offers excellent grazing. A few scattered pine and poplar are seen.

SEC. 29 (N. $\frac{1}{2}$ AND SW. $\frac{1}{4}$).—Elevation from 3,390 feet to 4,080 feet. The N. $\frac{1}{2}$ is semi-open grazing land of no agricultural value. Scattered timber of pine and fir. Good grazing.

The southeast part is nearly all open grazing land, except for a small stretch of fir and pine in the northeast part along the creek.

SEC. 30.—Elevation from 3,150 feet to 3,730 feet. The E. $\frac{1}{2}$ is open rolling country, rather stony, and fit only for grazing.

The W. $\frac{1}{2}$ is open grazing land of workable soil, but too rough in outline for agriculture.

SEC. 31.—Elevation from 3,100 feet to 3,390 feet. The E. $\frac{1}{2}$ and the west part of the NE. $\frac{1}{4}$ are all open land, with the exception of a few stretches of poplar and willow. The soil is workable, but the general surface outline is too rough for agriculture. Good grazing.

SEC. 32.—Elevation from 3,260 feet to 4,280 feet. The W. $\frac{1}{2}$ is rolling land of no agricultural value. Scattering bull pine of good quality to 24 inches. Grazing fair.

The E. $\frac{1}{2}$ is semi-open grazing land with scattering fir and pine to 20 inches.

SEC. 33.—Elevation from 3,590 feet, rising to the east. Grazing land with scattering fir of good quality to 20 inches.

NE. $\frac{1}{4}$ OF THE TOWNSHIP.—This area was not examined in detail, being all over 4,000 feet above sea. It is essentially timbered land, having large areas of fir and pine to 24 inches, with many areas of excellent grazing land.

Tp. 21, R. 26, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

Only the N. $\frac{1}{2}$ of this township was examined. (Season 1911.)

The flat workable land in this area is all included in Bonaparte Indian Reserve No. 4.

The land rises steeply rolling to the northwest and southeast, reaching an altitude of 4,000 feet above the sea at from one-half to two miles from the creek. The undisposed of portion is timbered land mostly, with some open land near the creek in secs. 23 and 29 and in sec. 21.

SEC. 19 (UNDISPOSED OF PART).—Elevation from 2,770 to 3,280 feet above the sea. There are a few acres of workable land in the SW. $\frac{1}{4}$. The land is all timbered with a fair growth of fir to 20 inches. The grazing is fair.

SECS. 20, 21, 28 AND 29 (UNDISPOSED OF PART).—Elevation from 2,530 to 4,000 feet and over above the sea. There is no agricultural land in this area, being broken land with much rock slopes. There is first-class grazing of bunch grass and pine grass. There is a good growth of fir to 30 inches.

SECS. 22 AND 27.—Elevation from 3,320 to 4,000 feet and over above the sea. High rolling land of no agricultural value. Fairly well timbered with fir to 28 inches in the west part, but rather open in the east with clumps of cottonwood and poplar. Grazing is good.

SECS. 23 TO 26.—This area is all over 4,000 feet above the sea. No agricultural value. This area has some value in fir in the north-and northwest parts, but in general is traversed by stretches of open grazing land and clumps of poplar and cottonwood. It is a very fair grazing area.

SECS. 30 TO 32.—Elevation from 2,600 to 4,000 feet above the sea. This area is particularly rough and rocky, rising steeply to the west and north. The land is all timbered, but mostly with fir and bull pine of a small stunted variety up to 20 inches. There is no agricultural or lumber value. Grazing is good in general of bunch grass.

SEC. 33.—Elevation from 2,450 to 3,320 feet above the sea. There is a small flat in the NE. $\frac{1}{4}$ of this section that could be worked with irrigation. It is suitable for mixed farming, probably 20 acres. The remainder is timbered land having a scattered growth of fir to 24 inches with fair grazing.

SECS. 34 AND 35.—Elevation from 2,740 to 4,000 feet and over above the sea. No agricultural value. Steep slopes. Timbered land with fir to 30 inches of value particularly in sec. 35. Grazing is fair.

SEC. 36.—Nearly all over 4,000 feet above the sea. High land covered mostly with jack pine to 12 inches and some fir to 24 inches in parts. Grazing is poor.

A. V. Chase, D.L.S., 1912. (South half).

This township furnishes a good example of the inadvisability of attempting mixed farming at high altitudes. One settler here made extensive improvements on lands in the S. $\frac{1}{2}$ of sec. 11 at an elevation of about 3,900 feet, but after two years' trial found that the only purpose the land would serve was stock raising. Even the hay crop at this altitude is poor.

The most valuable resource of this area is its grazing land. With the exception of lands south of Medicine creek in secs. 1 to 3 and the east part of sec. 4, all the land in this locality is fit for grazing purposes. There is, of course, a considerable quantity of timber throughout the township, but its monetary value is not notable.

Agricultural lands in this township are of very small area and are found only in the west part.

SECS. 1 TO 3 (INCLUSIVE).—Nearly all of this area lies south of Medicine creek, and the lowest elevation recorded was 3,500 feet at the west boundary of sec. 3. The land rises steeply to the south and reaches an elevation of 4,500 feet at the south boundary of the township. As this area is thickly timbered the grazing is of small value.

The timber is composed mainly of jack pine of small size very thickly placed on the slopes. In the west part there is a quantity of scattered fir and pine, and in sec. 3 a number of areas of old burn covered with second growth fir, pine and poplar.

SEC. 4.—Elevation from 3,300 feet to 4,000 feet. This section is divided from east to west by the valley of Medicine creek, and the land rises steeply to north and south therefrom. That part north of the creek is fairly open and is a good grazing area. It is covered with scattered fir and pine to 20 inches.

South of the creek the country has opened out considerably, and an amount of good grazing land is in evidence. The class of timber on this side of the creek is better, but widely scattered.

There is no agricultural land in this section.

SEC. 5.—Elevation from 3,110 feet to 3,780 feet. The N. $\frac{1}{2}$ of this section contains an area of about 40 acres of flat and gently sloping land of sandy loam soil. The local conditions are such that the land would be quite unproductive without irrigation. There is little vegetation of any kind on it but sage brush. The remainder of the N. $\frac{1}{2}$ steeply rolling country covered with scattered pine and fir, and is fit only for grazing.

South of the creek the land is fairly open and exceptionally good for grazing. It is covered with scattered pine.

SEC. 6.—Elevation from 2,990 feet to 3,780 feet. That part of the S. $\frac{1}{2}$ west of Hat creek is nearly all open land with the exception of a few areas of poplar and brush. In the extreme southwest part there is a small area of fairly flat land, and throughout the SW. $\frac{1}{4}$ the land is sandy loam soil fairly free from rocks and rolling in outline. Only with an extensive irrigation scheme could this land be of agricultural value.

The NE. $\frac{1}{4}$ is rolling land of good soil but is too uneven in outline to be of use for agriculture. Grazing on this area is rather poor.

SEC. 7 (E. $\frac{1}{2}$).—Elevation from 2,990 feet to 3,600 feet. This area is chiefly steep side hill timbered with a small grade of bull pine. Parts of it are semi-open and the grazing is good. No agricultural land.

SECS. 8 TO 10 AND 15 TO 17 (INCLUSIVE).—Elevation from 3,270 feet to 4,300 feet. This land is gently rolling in outline with a continuous rise to east and north to a summit of 4,300 feet at the east boundary of sec. 15. It is essentially a grazing area. Much of the land is composed of good soil but that portion which is low enough in elevation for agricultural purposes is too rough in outline.

Throughout this whole area the timber is found only in scattered stretches. It is mainly bull pine and a few fir in the lower levels with jack pine and poplar in the higher.

Thousands of acres of open range land are found throughout which have abundance of nourishing grasses.

SEC. 11 (N. $\frac{1}{4}$).—Elevation from 3,800 to 4,100 feet. This area is mostly jack pine country. The timber is small but the grazing is fairly good throughout.

SEC. 12.—Elevation from 3,900 feet to 4,500 feet. The S. $\frac{1}{2}$ contains a good deal of bottom land fairly open with excellent grazing. The land rises from this to north and south. The timber in the south part is mostly medium sized jack pine.

The north part is semi-open jack pine country giving fair grazing.

SEC. 13 AND 14.—Elevation from 4,010 feet to 4,300 feet. This is an area of rolling jack pine country. Its chief value is as a grazing area.

SEC. 18.—Elevation from 2,880 feet to 3,500 feet. The E. $\frac{1}{2}$ of this section contains about 50 acres of light sandy loam soil at an average elevation of 3,230 feet, and at such should be productive under dry culture. The soil, however, is rather sandy and will not hold much moisture on that account. It is timbered throughout with a fair quality of bull pine to 20 inches.

The remainder of the section is steeply rolling land sloping down to Hat creek and is timbered. The timber in the E. $\frac{1}{2}$ is good pine to 20 inches but that in the west is rather small and scattered. The grazing is only fair.

Tp. 22, R. 26, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

This township is traversed through the southeasterly part by Hat creek and the land rises steeply to the northwest and southeast therefrom. All the workable bottom land of the valley of Hat creek is disposed of and only a few workable benches of higher elevation present any agricultural value. There is a small area of fairly open land in the centre of the township, in fact in the vicinity of the creek bottom, the land is of an open nature, but as one goes back from the creek the land is nearly all timbered with scattered open spaces of grazing land. The northwesterly part is very

high and rough showing little merchantable value of any kind. The extreme northeast and southeast parts are fairly well timbered with fir and occasional bull pine and jack pine.

SEC. 1.—Elevation, from 3,260 to 4,000 feet and over above the sea. Rises steeply to a summit in the southwesterly part. Timbered land, mostly small jack pine with a few fir and bull pine. Grazing is good.

SEC. 2.—Elevation, from 3,500 to 4,000 feet and over above the sea. Rising to the south. No agricultural value. Fair growth of fir to 20 inches. Grazing is fair.

SEC. 3.—Elevation, from 2,420 to 3,500 feet above the sea. Rising to east and south. No agricultural value. Steep slopes. Small fir and bull pine to 10 inches. Grazing is rather poor.

SEC. 4.—Elevation, from 2,920 to 3,600 feet above the sea. Rising to the west is very rocky and irregular. Mostly timbered with scattered fir and bull fir of no merchantable value. Fairly good grazing land—bunch grass.

SEC. 5.—Elevation, from 2,700 to 3,600 feet above the sea. Rises to northeast and southwest from valley of small creek. Steep, rough and rocky. Poor grazing and no timber value.

SEC. 6.—Elevation, from 3,400 to 4,000 feet and over above the sea. Rises steeply to the west. Undisposed of part mostly open land, giving good grazing on bunch grass. No timber value.

SEC. 7.—Elevation, from 3,380 to 4,000 feet and over above the sea. Rising steeply to northwest. Rough and rocky. Small timber of no value. Grazing is fair.

SEC. 8.—Elevation, from 3,440 to 4,000 feet and over above the sea. Rising to north and west. Broken land. Small value of any kind. Some grazing land. Scattered timber, fir and bull pine.

SEC. 9.—Elevation, from 2,420 to 3,800 feet above the sea. Rising steeply to the northwest. All timbered but small value. Small fir and jack pine. Some fir to 24 inches in north part. Grazing is fair.

SEC. 10.—Elevation, from 2,290 to 3,500 feet above the sea. Rises to east and west of Hat creek with precipitous rolling slopes. To the west of Hat creek the land is timbered with scattered small bull pine. Grazing is poor to the east but fair to the west.

SECS. 11 AND 12.—Elevation, from 2,720 to 4,000 feet and over above the sea. Steep slopes. No agricultural value. Timbered land with a fairly good growth of fir to 30 inches in the north part. Toward the south part the timber is not so good. More jack pine and smaller fir. Grazing is fair.

SECS 13 AND 14.—Elevation, from 2,420 to 3,700 feet above the sea. Rising steeply to the south. Fairly open in the north part but timbered in the south. Fir to 24 inches with considerable small growth. Grazing is good.

SEC. 15.—Elevation, from 2,290 to 3,400 feet above the sea. A small portion of the SE. $\frac{1}{4}$ is very steep and broken. Scattered small fir and bull pine. West of Hat creek the land is fairly open with good grazing. Some scattered small timber. No agricultural value.

SEC. 16.—Elevation, from 3,090 to 3,900 feet above the sea. Rising to the west. No agricultural value. Alternately open and timbered. Good grazing. Timber value small. Scattered stretches of fir and bull pine to 10 inches with some poplar brush.

SECS. 17, 18, 19 AND 20.—Rising from 3,800 feet to over 5,000 feet above the sea. A very rough area with steep slopes of no agricultural value. Timbered land very rocky in the west part. Small timber value. Scattered stretches of small fir and bull pine with some to 24 inches. Grazing is fair.

SEC. 21.—Elevation, from 3,090 to 4,000 feet and over above the sea. No agricultural value. Rough and broken land. Timbered with a poor quality of fir to 20 inches. Grazing is poor.

SEC. 22.—Elevation, from 2,880 to 3,600 feet above the sea. Rolling broken land, very stony. Timbered with a poor grade of fir to 16 inches. Grazing is poor.

SECS. 23 AND 24 (NORTH HALVES).—Elevation, from 2,200 to 3,400 feet above the sea. Much cut by gulches. No agricultural value. Timbered with scattered small fir and bull pine which increases in size toward the north boundary. Fair grazing in the north part.

SECS. 25 TO 36 (INCLUSIVE).—Nearly one half this area is over 4,000 feet above the sea, the remainder rising from 2,770 feet in the south part of sec. 25 to 4,000 feet above the sea in the north part of the township.

No agricultural value. The E. $\frac{1}{2}$ of this area is fairly well timbered throughout with fir and bull pine to 24 inches and 30 inches, although many stretches with little but small trees occur. Grazing is fair. The W. $\frac{1}{2}$ rises steeply to the west to probably 5,000 feet above the sea. About four square miles of this area is fairly well timbered with the usual run of fir to 24 inches mixed with small second growth fir and bull pine.

SECS. 30 AND 31 run mostly to small jack pine. Fair grazing of timber grass.

Tp. 23, R. 26, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

This fractional township is traversed by the valley of Maiden creek and consists mainly of steep side hills to the north and south of this valley. About one half its area is over 4,000 feet above the sea-level. It is almost completely timbered and holds a good deal of very rough country to the north of the creek valley.

PORTION SE. OF MAIDEN CREEK.—Elevation, from 2,120 at junction of Maiden and Allen creeks to 4,000 feet and over above the sea. This part of the township is all timbered but consisting of steep and rolling slopes rising quickly from Maiden creek to the southeast through land of no agricultural value. The timber is composed of very good quality of fir from 15 inches to 30 inches with few bull pine. Rather less timber in sec. 13. In the southeast part there is less timber and much small jack pine. Grazing is very fair all through this area on the north slopes.

The southwest part of the township contains no land of agricultural value except about 10 acres in sec. 3 which could be irrigated from Maiden creek. Elevation, about 3,500 feet above the sea, rather high for agricultural value. There is no agricultural land other than this.

SEC. 5.—Elevation, nearly all over 4,000 feet above the sea. Fair growth of fir to 20 inches in the northwest part with fair grazing.

SEC. 9.—Elevation, all over 4,000 feet above the sea. Rises high and the timber consists of fir to 20 inches running into stunted jack pine in the higher altitudes.

SEC. 24.—Elevation, from 2,120 to about 3,600 feet above the sea. The N. $\frac{1}{2}$: Steep side hill covered with young fir and bull pine with a few bull pine to 16 inches. Grazing is mostly bunch grass. The S. $\frac{1}{2}$: Timbered slopes of no agricultural value. Timber of small size, fir and bull pine. Rocky, west of Maiden creek. Rather poor grazing.

REMAINDER, NW. OF MAIDEN CREEK.—Very rough, rocky land. South exposure. Timber rather stunted. Fir and bull pine. Grazing is poor.

Tp. 13, R. 27, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

The Fraser river traverses this township through a portion of its easterly and northeasterly part. It is an exceedingly rough area of country and the combined areas of unsettled land fit for cultivation would not exceed 50 acres. Much solid rock formation is found throughout and only a strip of land one and one-half sections wide on the east of the township was considered in detailed examination.

SECS. 1, 12 AND 13.—These sections rise sharply from the water's edge of the Fraser river to mountainous heights to the east and west. It is all timbered land. The timber is composed mostly of small and medium-sized fir and pine with considerable underbrush and young trees. Practically no grazing.

SEC. 24.—The lands rise sharply from the Fraser river to an elevation of 1,440 feet at the east and west boundary of the section. There is a small area of agricultural land in the NE. $\frac{1}{4}$ immediately east of Kanaka Bar Indian reserve No. 1.

About 10 acres of rich sandy loam soil might be worked here. There are also a number of small areas from 2 to 3 acres in extent in this quarter that are workable land. Some of these are cleared, and one or two improved and occupied by Indians, but the combined acreage is not such as to tempt any white man to settle.

The remainder of the section is extremely steep and rough, being traversed by many stony ridges and gullies. The timber is mostly bull pine of small size with a great deal of underbrush particularly east of the river.

SEC. 25.—There are a few small areas in this section from 2 to 5 acres in extent some of which are slightly improved and are fenced, and a couple of which are cultivated. While these are at an elevation suitable for fruit growing, the aggregate area is not such as to tempt the average settler to locate.

The remainder of the section is all steep side hill rising to rocky mountains in the northeast part. West of the river the section is very rough. It is timbered with scattered fir and pine with dense underbrush of willow, birch, etc., to the west of the river. Practically no grazing.

SEC. 36.—East of the river this section is all steep side hill rising to rocky mountains in the northeast part.

West of the river this section is very rough. It is all timbered with scattering pine and fir of no commercial value.

The remainder of the section west of the river was not considered in detail.

Tp. 14, R. 27, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

The Fraser river traverses this township from north to south through the east part. The general character of the township is in keeping with that of lands to the south, there being only a narrow valley flanked by steep rocky hills. The lands east of the river slope somewhat more gradually for the first three-quarters of a mile eastward, but about this distance from the river the base of the main mountain is reached.

SECS. 1 AND 2 (EAST OF THE RIVER).—Elevation from river level to high mountains in the east part. Agricultural land about 500 feet above sea.

Only one area herein shows evident agricultural value. This about 12 acres of land in L.S. 12, sec. 1, and L.S. 9, sec. 2. This area is good rich loam soil though somewhat rocky and is under cultivation at the present time in hay and orchard.

The remainder of this section is rough and mountainous. It is covered with scattered fir and pine to 24 inches. Practically no grazing.

SEC. 2 AND 3 (WEST OF THE RIVER).—Outside Siska Flat Indian reserve No. 7 this area is extremely rugged, rising steeply from the river level westward through hills of solid rock. There is practically no commercial value in these lands, there being little but small-sized fir and pine in timber, with undergrowth of alder, willow, etc.

SECS. 10 AND 11 (WEST OF THE RIVER).—From the water level of the river rising westward to high rocky hills, these lands have a little more surface soil than those to the south, but are still too rugged as to surface to be of any value agriculturally. A forest fire was burning at the time of examination, and the extent of the damage to the timber is unknown. There is practically no grazing in these areas.

SECS. 11 AND 12 (EAST OF THE RIVER).—In this area the base of the mountain is very close to the river and the land slopes steeply right to the water's edge, leaving no area fit for cultivation. It is timbered with small fir and pine. Scant grazing.

SEC. 13.—Elevation from 960 feet, rising steeply eastward. The base of the mountains proper is somewhat farther from the river in this section, being well into the east half. The land in the western portion of the section is, however, very rough and full of barren hillocks. It has been burned over and only a few clumps of green timber remain. Scant grazing.

SEC. 14 (EAST OF THE RIVER).—Chiefly rugged side hill from river level to 960 feet above sea. It is covered with small fir and pine. Scant grazing.

SEC. 14 (WEST OF THE RIVER).—The NE. $\frac{1}{4}$ contains about 15 acres of agricultural land, some three to four acres of which are under cultivation. The lands lie at an elevation of 600 feet above sea and have a fair quality of sandy loam soil. The uncultivated part is gently rolling.

The remainder of the section rises steeply westward through rolling rocky land. A great deal of dense underbrush is found and much small young fir, but trees of good size are very scattered. Fire has done much damage among the timber. Practically no grazing.

SEC. 23 (WEST OF THE RIVER).—Elevation from river level to 1,600 feet. The only agricultural land noticed was a small area of 3 to 5 acres in the SW. $\frac{1}{4}$. This gently rolling land suitable for fruit growing. A very little improvement has been done by Indians. The remainder is steeply rolling. There is a great deal of small fir but no merchantable timber. Scant grazing.

SEC. 23 (EAST OF THE RIVER).—The NE. $\frac{1}{4}$ contains about 8 acres of fruit land, 4 acres of which is planted in orchard and garden, at an elevation of 550 feet.

The remainder of the section is very rocky and is timbered with small pine and fir. Scant grazing.

SEC. 24 (PART UNDISPOSED OF).—Elevation from 700 feet rising steeply to the east. No agricultural land. Timber scattering, fir and bull pine in old burn. No grazing.

SEC. 25.—Elevation from 720 feet, rising steeply to the eastward.

The W. $\frac{1}{2}$ is a rocky rolling country of no agricultural value. It is covered with jack pine to 10 inches and is fairly free from underbrush.

The E. $\frac{1}{2}$ is rocky mountains. No grazing.

SEC. 26 (WEST PART).—With the exception of four or five acres immediately north of Lytton Indian reserve No. 26 and immediately west of Lytton Indian reserve No. 25, this area is of no account agriculturally. At the part mentioned the land is cleared, and the old Indian reserve boundaries could not be found. Taken in itself the small area is not sufficient for homestead purposes. The remainder of the section is steep land timbered with small fir and pine.

SEC. 35 (WEST OF THE RIVER).—Elevation from 460 feet to steep hills in the west. There are some small areas of gently rolling land of good loam soil but their agricultural value is very doubtful. In general the section is steeply sloping with a good deal of rugged land. It is covered with fir and bull pine to 18 inches. Very scant grazing.

SEC. 35 (EAST OF THE RIVER).—Along the river there is a small strip of steeply sloping land timbered with fir and pine to 16 inches.

In the extreme NE. part there is an area of about 3 acres of sandy loam bench fit for fruit. Timber is scattered small pine and fir. Scant grazing.

SEC. 36 (E. $\frac{1}{2}$ AND PART SW. $\frac{1}{4}$).—Rises from 830 feet to the base of rocky mountains in the E. $\frac{1}{2}$.

The E. $\frac{1}{2}$ is nearly all rocky mountains lightly timbered with fir and pine to 18 inches.

The SW. $\frac{1}{4}$ is less stony but very rolling and cut up by gullies. Scattering pine and fir to 18 inches.

Scant grazing throughout this section.

Tp. 15, R. 27, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

The Fraser river flows southerly through this township from a point near the centre of the north boundary, to the southeast corner. It is flanked on the west by steep rocky mountains and on the east by steep hills running into rock formation in the north part. Agricultural land in this township all lies within an area extending from one mile to one mile and one-half on either side of the river and is entirely

dependent for successful production on irrigation, all such lands lying at a low elevation. Almost all the unsettled land in the township is timbered land the majority of the timber, however, being of small merchantable value on account of the stunted growth brought about by dry and shallow soil. The grazing is almost negligible.

Lands supposed to be of agricultural value in this township, east of Fraser river, are supposed to be irrigable by the conservation of waters in a reservoir at Botanie lake, as mentioned in another part of this report.

SEC. 1.—Elevation from 460 feet to about 1,800 feet. The E. $\frac{1}{2}$ of this section is composed mainly of the Fraser river, the town of Lytton and Indian reserve.

The SW. $\frac{1}{4}$ is mostly steeply sloping hill but contains a number of small isolated areas of from two to five acres in extent, of good agricultural land. Most of these areas of these would not exceed 25 acres. There is considerable good fir and pine averaging 16 inches in diameter. Grazing poor.

In the NE. $\frac{1}{4}$ there is a small area in L.S. 13 in hay. In L.S. 13 and 14 there is about 20 acres altogether of agricultural land with some cultivation. The remainder of the quarter is rolling hill covered with small pine and fir. Scant grazing.

SEC. 2.—Elevation from 800 feet up. There is a small area of 2 to 3 acres in the northeast corner of agricultural land cultivated and in hay. This land is cultivated by Indians. Otherwise the section is all steep side hill and rock slide. Mostly small timber but a number of fir to 24 inches are met with. Scant grazing.

SEC. 11.—Elevation from 500 feet to 1,600 feet. SE. $\frac{1}{4}$ L.S. 1 is nearly all sandy loam soil fit for cultivation. A few acres in the southeast corner are planted in hay while the rest is covered with small bull pine. L.S. 2 is chiefly steep side hill.

NE. $\frac{1}{4}$ (part undisposed of) is rolling sandy country unfit for cultivation. It is covered with small bull pine.

The W. $\frac{1}{2}$ is all rugged side hill. It is nearly all burned over with dead timber standing. Grazing scant throughout this section.

SEC. 12 (PART UNDISPOSED OF).—Elevation from river level to 1,500 feet.

L.S. 4.—Part of this is cleared and cropped in hay. A rather sandy soil, it is about one-half agricultural land. Small bull pine. Poor grazing.

PART EAST OF THE FRASER RIVER.—The land here rises steeply to the east from the banks of the river through steep cut banks and as one goes easterly through rolling sandy hills. No agricultural value. Scattered open bull pine timber. Scant grazing.

SEC. 13.—A small portion of the northeast corner of this section at an average elevation of 1,000 feet is still undisposed of. This area is rather rocky and rough. It is covered with bull pine to 24 inches. Practically no grazing.

SEC. 14 (WEST OF THE RIVER).—Elevation from river level to about 900 feet.

That part of the E. $\frac{1}{2}$ west of the Fraser river is nearly all gravelly cut banks.

The NW. $\frac{1}{4}$ contains a few acres in the southwest part in hay and fruit. A good deal of the northeasterly part is also fit for fruit, though the soil has a large percentage of sand. It would need abundant irrigation. It is mostly covered with bull pine averaging 16 inches. Scant grazing.

L.S. 4 is all rough burnt over side hill.

SEC. 15.—Elevation from 640 feet to high rocky mountains. The NE. $\frac{1}{4}$ contains about 80 acres of agricultural land, considerable of which is under cultivation in hay. This land is rather sandy and needs abundant irrigation. It is at an elevation suitable for fruit.

The remainder of the section is rocky and mountainous, rising steeply to southwest. It is timbered throughout with bull pine and a few fir. Some fair-sized trees are seen especially in the NW. $\frac{1}{4}$. Scant grazing.

SEC. 22.—Elevation from river level to 1,000 feet. Most of the SE. $\frac{1}{4}$ south of Lytton Indian reserve No. 9 is agricultural land fit for fruit. The soil is very sandy, especially at the surface, but with abundant irrigation should be productive.

The remainder of the section to the west is very rough and rocky. There is considerable good pine to 20 inches throughout. Grazing scant.

SEC. 23 (PART UNDISPOSED OF).—Elevation from river level to 1,120 feet. That part east of the Fraser river is a broken and stony area. It is covered with bull pine having a fair quantity to 20 inches. Scant grazing.

The part west of the river contains a couple of small areas of agricultural land of a rather sandy soil, about 20 acres in all, some of which is under hay. The remainder is covered with small bull pine. Scant grazing.

SEC. 24.—Elevation from 600 feet to 1,960 feet. The N. $\frac{1}{2}$ of this section is rather rough and rocky, but it would be possible to grow fruit. On account of the sandy and porous nature of the ground abundance of water would be needed.

The southeast part is rather steep and of no agricultural value. This section is timbered with open bull pine averaging 16 inches. Scant grazing throughout.

SEC. 25.—Elevation from 1,120 feet to 2,500 feet. The south is rather sandy soil with scattering stones, but has possible value for fruit growing with abundant irrigation.

The north half is all rocky hill.

The timber is open bull pine averaging 16 inches with a rather stunted growth in the north part. Scant grazing.

SEC. 26.—Elevation from river level to about 2,000 feet.

The SE. $\frac{1}{4}$ is steep, gravelly cut banks.

The N. $\frac{1}{2}$ is rock side hill and slides. It is timbered throughout with scattering pine to 20 inches. Scant grazing.

SEC. 27.—Elevation from river level to 1,330 feet. The part undisposed of is chiefly steep side hill, the land rising abruptly from the banks of the river. It is timbered with scattering bull pine of no commercial value. Scant grazing.

SEC. 28.—From river level to steep rocky hills. The NE. $\frac{1}{4}$ contains about 6 acres of open bench land, suitable for fruit, of sandy loam soil. It is situated close to the north boundary of the NE. $\frac{1}{4}$.

The remainder of the section rises steeply to the westward through rocky mountains. Timber is scrub pine and fir.

SEC. 33.—Elevation from river level to high mountains.

The E. $\frac{1}{2}$ of this section contains a large area of workable bench land, about 150 acres in all. Fifty acres of this is cultivated in hay. The whole area is suitable for fruit growing.

The W. $\frac{1}{2}$ of the section is steep rocky mountain. Timber is scrub pine and fir. Grazing scant.

SEC. 34.—Elevation from river level to high mountains.

The SW. $\frac{1}{4}$ west of the Fraser river contains about 5 acres of bench land suitable for fruit.

The part east of the river rises steeply from the water's edge through rough slopes. Timber is small pine and fir. Scant grazing.

The remaining part of the township west of the river is all rocky mountains. The valley of Stein creek west of sec. 22 is a steep rocky gorge as far west as the boundary of the township. Considerable scattered good timber is found up this valley in fir and pine but hardly in sufficient quantity to be considered commercially.

SECS. 35 AND 36.—These sections are all rocky hills timbered with scattered medium-sized fir and pine. Practically no grazing.

Tp. 16, R. 27, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

This township is traversed throughout its western part from north to south by the Fraser river, which is flanked on either side by steep mountains rising almost from the water's edge. The only agricultural land in the township is found on the small benches within three-quarters of a mile of the banks of the river.

That part of the township west of the Fraser river presents the roughest area in it and the least agricultural possibilities. Only two areas of agricultural land not

disposed of were noticed here, one in the SW. $\frac{1}{4}$ of sec. 20 and one in the north part of sec. 32 adjoining Lytton Indian Reserve No. 13.

The area in the SW. $\frac{1}{4}$ of sec. 20 consists of about 15 acres of rich bench and bottom land under cultivation. It is suitable for fruit, vegetables or any garden stuff. This portion has been cultivated by Indians for some time. There is a small building on the place.

That portion in the north part of sec. 32 is a bench of excellent sandy loam soil also under cultivation. There is an area of about 20 acres of workable land here most of which was, at the time of examination, planted in beans. This is also cultivated by Indians and there is a very respectable cabin on it.

Outside of this area that part of the township west of the river holds little value of any kind. It is all timbered land, much of it holding good areas of open bull pine and fir but generally speaking the timber is so placed as to be practically inaccessible for lumbering operations. There is much rocky formation with rock slide and precipice.

Scattered areas of good grazing land are seen but as a rule the surface soil over the rock formation is too shallow and the grasses are dried out.

In that part east of the river the mountains run right down to the water's edge at the south boundary but recede as one goes north to about one-half mile distant leaving a small flat in the NE. $\frac{1}{4}$ of sec. 4, some bench land in the W. $\frac{1}{2}$ of sec. 16, the NW. $\frac{1}{4}$ of sec. 21 and the SE. $\frac{1}{4}$ of sec. 32.

SEC. 4 (EAST OF THE RIVER).—Elevation, from river level to 810 feet. The NE. $\frac{1}{4}$ contains a flat bench of workable land that would be productive in fruit. There is possibility of an error in the homestead entry here. The SE. $\frac{1}{4}$ is shown homesteaded and the NE. $\frac{1}{4}$ vacant. In the opinion of the writer the reverse was the intention.

The remainder of this area is steep rock timbered side hill of no commercial value.

SECS. 16 AND 17 (EAST OF THE RIVER).—Elevation, from river level to high mountains on the east. This area rises rapidly from the river to the east, leaving two areas of sandy loam bench in the NW. $\frac{1}{4}$ of sec. 16, 10 acres in all fit for fruit. This is at present in hay and garden stuff.

The remainder of this area is steep rocky bench land covered with scrub pine. Poor grazing.

SECS. 20 AND 21 (EAST OF RIVER).—From river level rising to east to rocky mountains. The undisposed portion of these sections is chiefly steeply side hill covered with open bull pine timber of medium size. There is a small area of about 10 acres in the northwest corner of sec. 21 of sandy loam soil fit for fruit growing but it is doubtful whether this area could be profitably irrigated.

SEC. 32 (EAST OF THE RIVER).—Elevation from river level to high mountains in the east. About 15 acres of land suitable for fruit growing is found in the SE. $\frac{1}{4}$ of this section. It would need abundant irrigation. Aside from this the section is steep side hill. Poor grazing.

The remainder of the lands east of the river in this township all consist of steep mountain side hill. They are all timbered lands the timber consisting chiefly of open bull pine from 12 inches to 20 inches. There is considerable timber fit for ties but it is nearly all so placed as to have very doubtful commercial value. Grazing is scant throughout.

Tp. 17, R. 27, W. 6th Mer. A. V. Chase, D.L.S., 1912.

There are two main valleys in this township, that of the Fraser river which flows southerly through the west part and that of Luluwysin creek which flows westerly through the north part. There is also a small secondary valley north and south through secs. 15 and 10. The valleys are flanked on all sides by steep timbered hills reaching elevations of 5,000 feet and over. Some areas of good fruit land are discovered in this township.

Some method of conservation should be applied to the waters draining westward through Luluwissin creek, particularly to the waters of the north branch.

SECS. 1 TO 4 AND 9 TO 14.—These are chiefly rough and rocky timbered hills of no agricultural value. They are fairly well timbered but owing to the rocky formation the timber is somewhat small and stunted. The best is found in secs. 11 and 14 where pine and fir of medium size is found in fair quantity. Fair grazing on the higher levels.

SEC. 5.—Elevation, from river level to about 2,000 feet. The SW. $\frac{1}{4}$ contains about 6 to 8 acres of good fruit land adjoining the Fraser river to the west. This area is almost flat, of a fine sandy loam soil and has very little timber on it. It could be irrigated from a creek which flows into the Fraser river to the south of it.

There is also about 5 acres of fruit land adjoining the Fraser river in L.S. 15. It is doubtful whether there is sufficient water in Isman creek to furnish water for this piece as well as for the land served at present.

SEC. 6.—All steep rocky mountains with small and scrub timber. Poor grazing.

SEC. 7.—Elevation, from river level to about 2,000 feet. The N. $\frac{1}{2}$ contains an aggregate of nearly 100 acres of land fit for almost any kind of agriculture. This is scattered in various areas throughout the N. $\frac{1}{2}$. The soil is in general a fine sandy loam and most of the areas are quite free from rocks or stones. All is quite flat enough for agricultural purposes and there is abundance of water in Siwhe creek for irrigation. Some of these areas are cultivated and all are more or less improved by Indians who occupy the lands at present. Two or three substantial buildings were also noted.

There is much workable soil outside the aforementioned areas that is considered too uneven as to outline to be of value agriculturally. It is covered almost entirely with a small sized bull pine, rather scattered. Poor grazing.

The SW. $\frac{1}{4}$ is all steep timbered hill. There is a quantity of good spruce and fir in the valley of Siwhe creek, but it is almost inaccessible so far as lumbering operations are concerned. Poor grazing.

SEC. 8.—Elevation from river level to about 2,000 feet. L.S. 5 contains about 10 acres of bench land adjoining the Fraser river which are at present cultivated and planted in beans (i.e. at time of examination). This is rather sandy and gravelly and needs abundant irrigation.

L.S. 2 and 3, east of the river, contain about 3 to 5 acres of fruit land adjoining the river. There does not appear to be any source from which this piece could be profitably irrigated.

The remainder of the section holds no agricultural value. It is steeply sloping and broken and in general timbered with small and stunted pine and a few fir. Grazing scant.

SEC. 15.—This section contains about 75 acres of agricultural land in the centre and south centre. It is dark sandy loam soil fairly free from stones and lies at an elevation of 3,500 feet. This should be suitable for dry culture but no instance of success in any of the cereals was met with in this locality and altitude. Hay does fairly well but to get a full and luxuriant crop would, in the opinion of the writer, need irrigation. The remainder of the section is broken and hilly, rising to the east from the valley. There is a very fair class of fir and pine on the hills but the centre of the section particularly in the north part holds little but jack pine. Good grazing.

SEC. 16.—All steep rocky hill timbered with small and stunted fir and pine. Grazing fair on the summit.

SEC. 17 (E. $\frac{1}{2}$).—Elevation from 1,270 feet, rising to the east. The SE. $\frac{1}{4}$ is all steep timbered hill. Small fir and pine. Scant grazing.

There is a strip of land along the base of the hill in the NE. $\frac{1}{4}$ the agricultural value of which is almost nothing on account of its rough outline and the absence of water for irrigation.

SEC. 18.—Elevation from river to about 2,000 feet. A few small areas are found in the SE. $\frac{1}{4}$ adjoining the Fraser river that are cultivated and occupied by Indians. All good sandy loam soil suitable for fruit or any kind of agriculture.

The SW. $\frac{1}{4}$ is all steep hill with open bull pine timber. Poor grazing

There are a number of benches in the N. $\frac{1}{2}$ to an aggregate area of about 30 acres, all of which are improved and under cultivation, mostly in beans. The altitude is suitable for any kind of agriculture. Outside these benches the N. $\frac{1}{2}$ is rolling timbered hill. The timber is small pine and fir and the grazing is poor.

There is a small bench on the shore east of the river that has a building on it. This is evidently used in connection with the homestead to the east.

SEC. 19.—Elevation from river level to 1,890 feet. The SW. $\frac{1}{4}$ contains a small area of land adjoining Intlpam creek, about 5 acres in all. There is much fine decomposed rock in the soil of this area. Mostly all steep open bull pine hill.

The NW. $\frac{1}{4}$ is a steep broken stony side hill. Scattered small pine and fir. Scant grazing.

A small area in the NE. $\frac{1}{4}$ adjoining lot 82 is under cultivation and suitable for fruit growing. Some rather steeply sloping bench land in L.S. 9 and 10 could be utilized for fruit with the proper facilities for irrigation. This is mostly open land.

SEC. 20.—Elevation from river level to about 2,000 feet. The NW. $\frac{1}{4}$ contains about 5 acres of good land adjoining lot 82, most of which is under cultivation. It is suitable for any kind of agriculture. The remainder of the section is rough and broken in the west part and steep timbered hill in the east. The timber is small and scattered. Grazing poor.

SEC. 21.—This section is located on the slopes and summit of a rocky hill. It is all timbered, but the timber is small and scattered. Grazing fair on the summit.

SEC. 22.—Elevation from 3,500 feet to over 4,000 feet. In the N. $\frac{1}{2}$, between the branches of Laluwissin creek, is found about 60 acres of light clay loam soil which should produce a good hay crop. It could be irrigated from the north branch of the creek. It is densely covered with small jack pine. Fair grazing.

The remainder of the vacant lands in this section is steeply sloping land of no agricultural value. It is thickly timbered with small and medium-sized fir and pine. Good grazing.

SEC. 23.—Elevation from 3,600 feet to 4,090 feet. The SW. $\frac{1}{4}$ contains some swamp land along the creek bottom covered with spruce and a heavy growth of willow. It is not fit for agriculture. There is some gently sloping side hill of sandy loam soil that is workable, but its agricultural value is doubtful.

The NW. and SE. $\frac{1}{4}$'s are mostly steep hill and timbered with pine and fir of fair size. Grazing is fair.

SEC. 24.—Elevation from 3,700 feet up. The NE. $\frac{1}{4}$ contains about 30 acres of land that could be cultivated in hay. Oats at this altitude showed failure, but hay does well. The remainder of the quarter is steep timbered hill.

The S. $\frac{1}{2}$ is all steep hill timbered with pine and fir of small commercial value. Poor grazing.

SEC. 25.—Elevation from 3,700 feet to 4,000 feet and over. This section rises steeply to the north through land timbered with small pine and fir, and the south part and with larger timber to the centre and north. Grazing fair.

SECS. 26 TO 28 (INCLUSIVE).—These sections are composed of high rocky timbered hills. The timber is for the most part stunted and scattered, but in the valley of the north branch of Laluwissin creek a large quantity of good fir and pine was seen. Grazing fair on the summits.

SEC. 29.—Elevation from 1,000 feet to 2,500 feet. The E. $\frac{1}{2}$ is all rocky hills. There is a small area in the SW. $\frac{1}{4}$ just east of lot 82 of good sandy loam soil fit for agriculture. Its irrigation would be necessary.

The remainder is rough and broken with open bull pine timber of small size. Scant grazing.

SEC. 30.—Elevation from river level to 1,380 feet. West of the river this is a steep and broken area covered with small pine and fir. Poor grazing.

The NW. $\frac{1}{4}$ east of the river is workable soil and could with some difficulty be cultivated in fruit. It would need abundance of irrigation, being gravelly and stony. The surface is not very uneven and the slope is easy. It is timbered with scattered young pine with larger trees to the east. Poor grazing.

SEC. 31 (E. $\frac{1}{2}$).—Elevation from about 800 feet to 2,300 feet. This area is in the valley but is exceedingly uneven and very rocky. No agricultural value. Scattered small pine. No grazing.

SEC. 32.—Elevation from 1,410 feet, rising to the northeast. A mountainous section. Only value in luxuriant growth of bunch grass on the summits. Timbered with bull pine and fir 10 inches to 20 inches.

SECS. 33 TO 36 (INCLUSIVE).—Not examined in detail. There is a considerable amount of excellent grazing on these summits. Timber is scattered and of no commercial value.

Tp. 18, R. 27, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

The lowest elevations in this township are found in the southwest corner, and a distinct and continuous rise to the north and east is noted. Nearly three-quarters of the whole area of the township would have elevations over 4,000 feet above sea. The only land warranting notice lies in the SW. $\frac{1}{4}$ of the township.

SEC. 5.—There is a small area of arable land along the north boundary of this section that extends into sec. 8. This piece is 40 acres in extent, and is in the form of a long narrow strip. It is sandy loam soil though somewhat rocky, and is covered with an undergrowth of pine and fir. Its elevation is about 2,210 feet.

The remainder of the section is mountainous and timbered with medium-sized fir and pine. Grazing is fair in places.

SEC. 6.—The E. $\frac{1}{2}$ is all steep and mountainous. The SW. $\frac{1}{4}$ contains about 15 acres under orchard and hay, adjoining lot 83 on the east, at an elevation of 1,150 feet. This is excellent land, and is occupied as part of the ranch on lot 83.

There is also about 5 acres of agricultural land adjoining lot 84 to the east, part of which is under cultivation. It is all good fruit land if irrigated.

Grazing is scant. The W. $\frac{1}{2}$ is covered with scattered timber of no value as all the good timber has been cut.

SEC. 7.—Elevation from 980 feet, rising to the northeast. A small portion of the SW. $\frac{1}{4}$ is gently sloping, but the remainder rises quickly through rocky slopes to the east. Practically no value of any kind. Scattering pine to 16 inches. Scant grazing.

SEC. 8.—This section contains most of the land of consequence in the township. There are three areas, one already mentioned which extends into, and was described under, section 5; one of about 50 acres just southeast of the centre of the section; and another of 45 acres in the north part.

The central bench of 50 acres is an open bull pine flat with a gradual slope to the southwest. The soil is a light sandy loam and almost free from rocks. Its elevation averages 2,210 feet.

The northerly bench of 45 acres is an open bull pine flat gently sloping and free from rocks. Its soil shows more clay and is described as a light clay loam. Its elevation is 2,290 feet.

The question of irrigation of these areas is one which will meet with some difficulty. It will be necessary to provide some conservation of the waters of the creek that flows through the section.

The remainder of this township proved so rough an area that examination was discontinued. It is almost without exception rocky mountains with scattering small pine and fir.

Tp. 19, R. 27, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

This township is all within the Hat Creek Forest reserve and is composed mostly of high mountains timbered on the lower slopes. The lowest elevation recorded in the township was 3,990 feet at the east boundary of section 36. At such elevations it is safe to say there is no land of agricultural value. Proceeding southward along the east boundary of the township, the land rises in elevation till at the northeast corner of sec. 24 it is 4,200 feet above sea, and is rising to the west and southwest. Examination of this township was not continued into the S. $\frac{1}{2}$.

The northeasterly portion is all timbered land, while in the extreme northeast part some areas of semi-open grazing land are seen; these are not of sufficient acreage to cause any of the land to be classified as grazing land. The larger timber is principally fir to 24 inches and is not very thickly placed in the east part of secs. 25 and 36, but is in somewhat better quantity to west and south. There are some stretches of small jack pine and poplar groves. Good grazing in general.

Tp. 20, R. 27, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

Only a small strip of land through the east part of this township lies at an elevation of less than 4,000 feet above sea, about 6 square miles in area. The remainder of the township is composed of steep rocky mountains of no value.

SEC. 1.—Elevation from 3,830 feet to 4,480 feet. No agricultural value. Soil, rocky and dry. Fair grazing. The W. $\frac{1}{2}$ is fairly flat, but the E. $\frac{1}{2}$ is rolling. A few scattering bull pine and fir with scattered poplar groves.

SEC. 11.—All over 4,000 feet. The E. $\frac{1}{2}$ contains some fairly good fir 12 inches to 30 inches, with undergrowth of fir, poplar and willow. Fair grazing.

The W. $\frac{1}{2}$ is all steep mountain side.

SEC. 12.—Elevation from 3,400 feet to 4,350 feet. This section is rolling and fairly open. It is essentially grazing land, with a few scattered fir and poplar groves.

SEC. 13.—Elevation, from 3,390 feet to 4,010 feet. The E. $\frac{1}{2}$ of this section contains a strip of first-class bottom land from 4 to 8 chains wide extending throughout the section and adjoining the east boundary. It is planted in hay and is well watered. The remainder of the section is rocky and dry and does not appear suitable for cultivation.

The E. $\frac{1}{2}$ is fairly open and may be classed as grazing land. The W. $\frac{1}{2}$ is more or less timbered, but without commercial value.

SEC. 14.—Elevation from 3,760 feet upwards. This section has no agricultural land. It is rolling land fairly well wooded with fir and pine, and the grazing is fair.

SEC. 23.—Elevation from 3,620 feet, rising to the west. The E. $\frac{1}{2}$ of this section is fairly well wooded with fir and willow of no commercial value. The land is rocky. Grazing is fair.

The west part is mountainous.

SEC. 24.—Elevation from 3,290 feet to 3,760 feet. The NW. $\frac{1}{4}$ is fairly open, is level and of workable soil, dotted with a few fir and poplar. This should produce hay if cultivated and irrigated.

The SE. $\frac{1}{4}$ contains a small fringe of bottom land about 5 chains wide, otherwise the quarter is rolling grazing land.

SEC. 25.—Elevation from 3,260 feet to 3,850 feet. The NE. $\frac{1}{4}$ contains a flat of about 10 acres of excellent sandy loam soil, north of Anderson creek. With this exception the section is open rolling grazing land with fringes of timber along the creek bottom and toward the west part of the section.

SEC. 26.—Elevation from 3,620 feet to 4,430 feet. All rough wooded land of no agricultural value. Fir and pine of small and medium size. Fair grazing.

SEC. 35.—Elevation from 3,680 feet to 4,430 feet. No agricultural land. Rough and rocky. Scrub timber. Poor grazing.

SEC. 36.—Elevation from 3,170 feet to 3,800 feet. Much of the soil in the east part of this section is workable but all is rough and uneven and unsuited for agriculture. The east part is grazing land, with a portion of the northeast corner having possible value in cultivation. The difficulty is in getting the ground, which is very uneven, irrigated.

A few scattered clumps of fir and poplar in the west. Rather poor grazing.

Tp. 21, R. 27, W. 6th Mer. *A. V. Chase, D.L.S., 1911.*

Only the N. $\frac{1}{2}$ of this township is included in the examination of lands this (1911) season.

This area is traversed in a northwesterly direction by the valley of "Marble Canyon." With the exception of a strip of land varying in width from 5 to 15 chains in this valley, all the lands herein are of a steep precipitous nature, more especially on the north side of the valley where sheer rock precipice occurs almost all across the township. Much solid rock occurs also on the south side. The undisposed of land in this valley could hardly be called agricultural land although some areas are workable. Profitable irrigation of these small areas is very improbable.

The land rises quickly to the north and south of the valley reaching an elevation of 4,000 feet above sea at a distance of from three-quarters of a mile to one mile therefrom, and continuing to rise to an elevation of 6,000 feet above sea. The timber to the north of the valley is of little or no value except possibly for some scattered medium-sized fir in the east part of secs. 24 and 25. The scattered timber along the rock faces could not be profitably cut. A similar state of affairs holds on the south side of the valley, with the exception that the timber is more thickly placed, but a great many patches of bare rock are seen. Grazing is found only on a few ledges.

Southeast of Indian Reserve No. 3, in the valley, a portable mill has been in operation and much of the good merchantable timber has been cut. Bull pine seems to have been preferred for the mill cut. Some good timber is still left standing in the valley, mostly bull pine. Grazing in the valley is very fair.

A. V. Chase, D.L.S., 1912 (S. $\frac{1}{2}$ ONLY).—This area is composed mainly of rocky mountains rising steeply to the southwest to a summit of over 6,000 feet in the Chipiun mountains. The eastern three sections and part of the three next west are at an elevation suitable for agriculture, but the remainder of the area is all high, rough and of no value except for the timber that is on it.

SEC. 1.—Elevation from 3,080 feet to 3,680 feet. The SE. $\frac{1}{4}$ of this section contains a few acres of fairly flat and gently rolling land of sandy loam soil that could be cultivated and should produce hay with irrigation. It is doubtful whether any garden stuff would be successful here with the exception of potatoes, according to local opinion.

The remainder of the section is rolling grazing land covered with groves of poplar and small fir. The soil is somewhat rocky.

SECS. 2 AND 3.—Elevation from 3,420 feet to over 4,000 feet. The W. $\frac{1}{2}$ of sec. 2 and the E. $\frac{1}{2}$ of sec. 3 contain between 100 and 125 acres of land around Finney lake at an average elevation of 3,900 feet above sea. There is possible value in hay growing in this land. The soil is good loam and sandy loam and is fairly free from rocks. As there is no example of success in this at this altitude and in this locality, it is not possible to classify this land with no possibility of error. It is a very good grazing area, being covered with a growth of peavine.

The remainder of these sections is fit only for grazing.

The E. $\frac{1}{2}$ of section is fairly well wooded with fir 12 inches to 24 inches on the higher levels and with willow and poplar on the low levels.

SEC. 11.—Elevation from 3,200 feet upwards. The land here is rough and rocky and of no value. The timber is scrubby and scattered. Grazing is rather fair.

SEC. 12.—Elevation from 2,790 feet to 3,420 feet. The W. $\frac{1}{2}$ of this section is similar to the land to the west, being rough and rocky and unfit for anything but grazing. The timber is scrubby pine and fir.

The SE. $\frac{1}{4}$ is mostly open rolling land covered only with sage brush. It is fit only for grazing.

SEC. 13.—Elevation from 2,740 feet to 3,200 feet. The land in the NE. $\frac{1}{4}$ is steeply sloping to the bed of Hat creek and is unfit for agriculture. It is fairly open and offers good grazing. That part of the W. $\frac{1}{2}$ still undisposed of is much the same as the NE. $\frac{1}{4}$.

SEC. 14 (W. $\frac{1}{2}$).—This area is mostly steep rocky mountains covered with scrub timber. Grazing is fair.

The remaining portion of this township is all high rocky mountains, and was not examined in detail.

Tp. 22, R. 27, W. 6th Mer. (Frac.) *A. V. Chase, D.L.S., 1911.*

With the exception of a small area of less than a quarter-section in the southeast corner of the township, all the land is over 4,000 feet above sea level.

On account of its altitude and rough nature little detailed examination was made of this area. The land rises steeply to the west and northwest and reaches an elevation of 6,000 feet above sea. There is no agricultural land in this township, nearly the whole of the southern and western part being a solid rock formation of mountainous hills.

Very little timber larger than from 12 inches to 16 inches is found. Mostly small sized fir with scattered bull pine, while in the northwest part only scattered scrub timber is seen.

Grazing is fair in the east part but scant in the west.

Tp. 17, R. 28, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

This is a township of high summits and only a very small area is sufficiently regular as to outline or low enough in altitude for agricultural purposes. A strip of land about one mile in width on the eastern part of the township contains all the agricultural land. There is continual slope upward to the west from the river level to summits of over 8,000 feet above sea in the west part.

SEC. 12.—Elevation, from 1,670 feet up. The SE. $\frac{1}{4}$ contains about 20 acres of bench land under hay. This land is south of Siwhe creek (which creek is shown incorrectly on the Kamloops sheet) and is almost entirely protected from the sun by the surrounding hills and is not suitable for any other produce on account of the lack of heat from the sun. It is fairly good soil and produces sometimes two crops a year.

There is also 60 to 70 acres of gently sloping rather stony land to the west extending into the SW. $\frac{1}{4}$ which is similar to the above-mentioned 20 acres. It is covered with a dense growth of young fir and pine with a few larger trees.

North of Siwhe creek there is an aggregate area of about 25 acres of workable land at an elevation of 1,700 feet. This land gets a great deal more sunlight than that to the south of the creek and would probably grow fruit. It is sandy loam with some stones and is covered with medium-sized pine and fir. Poor grazing.

SEC. 13.—Elevation, from 1,000 feet to 3,000 feet. The S. $\frac{1}{2}$ is all steep hill timbered with a small and medium-sized fir and pine. Poor grazing.

The N. $\frac{1}{2}$ contains a couple of benches at elevations of 1,540 feet and 2,220 feet, respectively, of an aggregate area of 20 acres. The lower one about 3 acres in extent is cultivated and planted in beans. The upper one to the extent of 17 acres is unimproved but should be suitable for garden truck. It consists of a rather dark loam soil covered with pine and fir of medium size. It is in a rather inaccessible position.

The remainder of the section is rough and broken. It is all more or less timbered but with no commercial value. Poor grazing.

SEC. 24.—Elevation, from 1,200 feet to 3,000 feet. A couple of small benches are discovered in the S. $\frac{1}{2}$ of an aggregate area of not over 20 acres. Some of this is partly cleared and it is evident that Indians are preparing to cultivate the areas. The soil is good and the altitude suitable for garden stuff.

Aside from these areas the section is very rough and steep. It is timbered with open bull pine of medium size. Scant grazing.

SEC. 25.—Elevation, from 840 feet to 2,500 feet. The NE. $\frac{1}{4}$ contains a small area of agricultural land fenced, cultivated and planted in beans. This area is less than 5 acres in extent. Other small areas are workable in this quarter and in L.S. 8 but are too small to be of note.

The remainder of the section is very steep and useless. Small and medium-sized fir and pine. Poor grazing.

SECTION 36.—Elevation from river level to about 2,500 feet.

The southeast quarter contains about 8 acres of rolling bench land of fair agricultural value. It has a small stream flowing through it out of the hills. This is suitable for fruit growing.

The remainder of the section is rough and useless. The country to the westward rises to a high mountain range and is covered with a scattering of small fir and pine. Scant grazing.

No further detailed examination was made in this township, except in the main valley of Intlpam creek where the land rises quickly, reaching an elevation of over 6,000 feet above sea in the west part of the township. The only value in this part is a large area of excellent grazing land around a small lake. This would be good only for a few months in the summer time on account of its elevation. Snow was encountered here at the end of August.

Tp. 18, R. 28, W. 6th Mer. *A. V. Chase, D.L.S., 1912.*

This township is traversed through its central part by the valley of the Fraser river and the lands rise steeply to east and west from points one-half to three-quarters of a mile from the water's edge. Some good agricultural land was met with but the timber value in the township is not of consequence.

SEC. 1.—Elevation from river level to 980 feet.

The southeast quarter contains an area of about 12 acres adjoining lot 83 which has been under cultivation and has some old buildings on it. This land is suitable for fruit growing. West of this the land drops abruptly to the Fraser river.

The northeast quarter has about 6 acres of similar land adjoining lot 84 on the west.

Otherwise this section is rough and worthless. It is mostly timbered with scrub fir. No grazing.

SECS. 2 to 10 (inclusive).—All steep mountains covered with small medium-sized pine and fir. Much solid rock outcrop with precipices and gullies.

SEC. 11.—Elevation from river level to 2,500 feet

The northwest quarter contains all the agricultural land in this section west of the river. It is part of a large bench extending south from section 14 and is mostly sandy loam soil free from stones. It is rather difficult to say just how much land could be made use of under fruit here. Possibly 30 acres.

The remainder of the section west of the river is steep side hill rising right from the water's edge of the river, and timbered to within 5 chains of it with small and medium-sized fir and pine of little commercial value.

In the NE. $\frac{1}{4}$ east of the river there is a small bench of 5 or 6 acres of fruit land adjoining the river. This is good soil but needs irrigation.

SEC. 12 (EAST OF THE RIVER).—Elevation from river level to 2,000 feet. A portion of the S. $\frac{1}{2}$ of this section, about 60 acres, adjoining the river could be planted in fruit and be successful with abundant irrigation. The outline of the land is rather rough and there is a good deal of clay in the soil.

The remainder of the vacant lands in this section is rough and rocky. Scattered scrub timber. Scant grazing.

SEC. 13.—Elevation from 1,020 feet to about 2,000 feet. There is an area of about 35 acres of agricultural land suitable for fruit adjoining lot 287 on the east and north. It is gravelly and sandy loam soil and the land is mostly open.

The remainder of the section rises steeply to the northeast and is of no agricultural value. Scattering fir and pine of medium size with some small growth are seen. Scant grazing.

SEC. 14 (EAST OF THE RIVER).—Elevation from river level to about 1,500 feet. The E. $\frac{1}{2}$ of this section contains three small areas of agricultural land, two adjoining lot 287 on the west and north and one in the NE. $\frac{1}{4}$. The aggregate area would not exceed 50 acres. These areas are all suitable for fruit, but would need abundant irrigation as the soil is somewhat sandy and gravelly in places.

The remainder of the section is rough and rolling and covered with scattered small pine. Poor grazing.

SECS. 14 AND 15 (WEST OF THE RIVER).—Rising from river level to rocky mountains in the southwest part.

There is a large bench here situated in the central and east parts of sec. 15 and the west part of sec. 14. This is good fine sandy loam soil free from rocks and is nearly all cleared land. It is rather difficult to say just what area here could be cultivated, but with an elaborate scheme of irrigation it is possible that upwards of 150 acres could be cultivated in fruit with success. These benches have been used and cultivated and have some old buildings on them, probably erected by Indians. The elevation is all less than 1,200 feet above sea. There is a creek flowing eastward through sec. 15 which should provide abundant water for irrigation purposes.

The remainder of these sections is steep rocky slope of no value. All is timbered with medium-sized pine and fir, much of which is almost inaccessible. Poor grazing.

SEC. 15 (EAST OF THE RIVER).—Not much land of any account was found here, the vacant land being mostly steep cut banks and gullies adjoining the Fraser river. An area of about 3 acres adjoining lot 85 is workable fruit land.

SEC. 22.—Elevation from river level to 1,200 feet. Very little land of importance in this section. Between lot 85 and the river an area of about 3 acres of fruit land is seen.

In the SE. $\frac{1}{4}$ east of Cinquefoil creek are two small areas of level bench totalling about 10 acres which are good for fruit.

The remainder of section is rough broken land sparsely timbered with medium-sized pine. Poor grazing.

SEC. 23.—Elevation, from 900 feet to 2,500 feet. The SW. $\frac{1}{4}$ contains several sage brush benches adjoining lot 85 with a total area of 12 acres which are suitable for fruit growing. These would need irrigation.

In the NE. $\frac{1}{4}$ there is a portion of a bench which extends southerly from sec. 26. This is described in detail under sec. 26.

The remainder of the section is rough, and timbered with open bull pine. Poor grazing.

SEC. 26.—Elevation, from 1,200 feet to 3,000 feet. This section contains about 120 acres of excellent agricultural land in three benches: The first bench lies slightly east of the centre of the S. $\frac{1}{2}$ and extends southward over the boundary leaving about 7 acres in the NE. $\frac{1}{4}$ of sec. 23. The whole area of this bench is 80 acres and it lies at an average elevation of 2,200 feet above sea. It is composed of clean sandy loam soil and covered with a fair quality of open bull pine timber. It is suitable for mixed farming. The second bench lies at the centre of the N. $\frac{1}{2}$ and is quite similar as to soil and timber. It is 40 acres in extent and lies at an elevation of 2,460 feet. It is suitable for mixed farming. The remainder of the section is rolling open bull pine hills. Timber value small and grazing only fair.

SEC. 35.—Elevation from 1,990 feet rising steeply to the northeast. The only agricultural land here is a small bench at an elevation of 2,300 feet. It is 7 acres in extent, of good soil and suitable for mixed farming.

The remainder of the section is rolling hills with open bull pine timber averaging 16 inches. Fair grazing.

SECS. 24, 25 AND 36.—These were not examined in detail, being on high rocky hills.

TABLE of Temperatures and Weather Conditions—Accompanying the Report of
A. V. Chase, D.L.S., Season 1910.

Day.	Place.	Altitude	Temperature Degrees Fahrenheit		Weather.
			Min.	Max.	
		Ft.	°	°	
June 1					
" 2					
" 3					
" 4					
" 5					
" 6	Tunkwa Lake.....	3835	44	48	Rain.
" 7	"	3835	34	67	Fair.
" 8	"	3835	28	71	Fine.
" 9	"	3835	32	69	Fair.
" 10	"	3835	40	82	Fine.
" 11	"	3835	49	74	Rain.
" 12	"	3835	31	56	Fine.
" 13	"	3835	36	69	Fine.
" 14	"	3835	44	67	Fine.
" 15	"	3835	32	70	Fine.
" 16	Guichon Ck., tp. 18, r. 21.....	3645	29	72	Fair.
" 17	"	3645	40	62	Fair.
" 18	"	3645	28	60	Fine.
" 19	"	3645	27	58	Rain.
" 20	"	3645	24	60	Rain.
" 21	"	3645	28	58	Cloudy.
" 22	"	3645	—	—	Cloudy.
" 23	Guichon Ck., tp. 17, r. 21.....	3405	27	74	Fine.
" 24	"	3405	30	66	Fair.
" 25	East of Indian res. No. 13, tp. 17, r. 22.....	3965	29	68	Fine.
" 26	"	3965	30	62	Fine.
" 27	"	3965	24	67	Fair.
" 28	"	3965	26	62	Fine.
" 29	Highland Valley in tp. 18, r. 23.....	3960	26	70	Fair.
" 30	"	3960	41	71	Rain.
July 1	"	3960	26	68	Fair.
" 2	"	3960	40	60	Rain.
" 3	Pukaist Ck., lot 1,065.....	3605	34	80	Showers.
" 4	"	3605	35	85	Fine.
" 5	"	3605	33	—	Fine.
" 6	Spatsum... ..	850	50	88	Fine.
" 7	"	850	60	87	Showers.
" 8	"	850	54	—	Fine.
" 9	N. By. tp. 19, r. 24.....	1832	52	92	Fine.
" 10	"	1832	56	91	Fine.
" 11	"	1832	52	92	Fine.
" 12	"	1832	56	93.5	Fine.
" 13	"	1832	64	82	Fine.
" 14	"	1832	46	85	Fine.
" 15	"	1832	56	82	Fine.
" 16	Centre tp. 20, r. 24.....	2325	45	85	Fine.
" 17	"	2325	43	78	Fine.
" 18	"	2325	40	80	Fine.
" 19	"	2325	42	89	Fine.
" 20	"	2325	43	—	Fine.
" 21	Sec. 16, tp. 20, r. 23.....	3490	35	76	Showers.
" 22	"	3490	38	62	Rain.
" 23	"	3490	34	75	Clear.
" 24	"	3490	32	68	Fine.
" 25	"	3490	28	81	Fair.

TABLE of Temperatures and Weather Conditions—Accompanying the Report of
A. V. Chase, D.L.S., Season 1910—*Continued.*

Day.	Place.	Altitude	Temperature Degrees Fahrenheit		Weather.
			Min.	Max.	
		Ft.	°	°	
July 26	"	3490	41	71	Showers.
" 27	"	3490	26	—	Fine.
" 28	Sec. 25, tp. 20, r. 23.	3060	45	79	Fine.
" 29	"	3060	46	82	Fine.
" 30	"	3060	47	82	Fine.
" 31	"	3060	41	81	Fair.
Aug. 1	Sec. 25, tp. 20, r. 23.	3060	40	—	Cloudy.
" 2	Sec. 28, tp. 20, r. 22.	2430	44	76	Fair.
" 3	"	2430	42	79	Fair.
" 4	"	2430	48	71	Showery.
" 5	"	2430	52	75	Showery.
" 6	"	2430	50	80	Fair to cloudy.
" 7	Old Camp, 3 Mile ck.	2190	53	88.5	Fine.
" 8	"	2190	52	86	Fair to cloudy.
" 9	"	2190	51	87	Fine.
" 10	"	2190	49	86	Fine.
" 11	"	2190	49	84	Fine.
" 12	"	2190	46	78	Fine.
" 13	Sec. 30, tp. 19, r. 20.	2890	45	70	Cloudy.
" 14	"	2890	49	65	Rain.
" 15	"	2890	47	64	Rain.
" 16	"	2890	39	69	Fair to cloudy.
" 17	"	2890	38	—	Fine.
" 18	Sec. 18, tp. 19, r. 20.	3535	36	76	Fine.
" 19	"	3535	36	82	Fine.
" 20	"	3535	39	78	Fine.
" 21	"	3535	48	62	Fair.
" 22	"	3535	40	63	Rain.
" 23	"	3535	32	43	Cloudy.
" 24	"	3535	26	60	Fair.
" 25	Sec. 11, tp. 20, r. 20	2095	37	81	Fine.
" 26	"	2095	41	76	Fine.
" 27	"	2095	40	78	Fine.
" 28	"	2095	43	66	Rain.
" 29	"	2095	40	76	Fair.
" 30	N. by. tp. 19, r. 19.	2090	44	65	Rain.
" 31	"	2090	43	63	Rain to fair.
Sept. 1	"	2090	51	75	Cloudy.
" 2	"	2090	36	74	Cloudy.
" 3	"	2090	48	74	Rain.
" 4	"	2090	50	73	Cloudy.
" 5	"	2090	47	60	Rain.
" 6	"	2090	49	64	Rain.
" 7	"	2090	36	64	Cloudy to rain.
" 8	"	2090	32	65	Fair.
" 9	"	2090	32	60	Fine.
" 10	E. by. tp. 19, r. 18.	2800	38	63	Fine to fair.
" 11	"	2800	44	70	Fair.
" 12	"	2800	29	63	Fine.
" 13	"	2800	32	68	Fine.
" 14	"	2800	36	65	Fine.
" 15	N. by. tp. 17, r. 17.	2220	33	81	Fine.
" 16	"	2220	36	80	Cloudy.
" 17	Sec. 20, tp. 17, r. 16.	3630	34	68	Fine.
" 18	"	3630	26	70	Clear.
" 19	"	3630	27	75	Clear.
" 20	"	3630	28	80	Fine.
" 21	Sec. 4, tp. 17, r. 16.	3760	29	72	Clear.
" 22	"	3760	29	68	Fair.
" 23	"	3760	34	54	Cloudy.
" 24	"	3760	30	46	Fair.
" 25	"	3760	15	56	Fine.
" 26	"	3760	42	54	Cloudy to fair.
" 27	"	3760	28	55	Cloudy.
" 28	"	3760	36	52	Rain to clear.
" 29	"	3760	39	50	Fair.
" 30	"	3760	31	49	Rain.

TABLE of Temperatures and Weather Conditions—Accompanying the Report of
A. V. Chase, D.L.S., Season 1910—*Continued.*

Day.	Place.	Altitude	Temperature Degrees Fahrenheit		Weather.
			Min.	Max.	
		Ft.	°	°	
Oct. 1	Sec. 4, tp. 17, r. 16.....	3760	35	52	Rain and hail.
" 2	" " " ".....	3760	27	41	Rain and sleet.
" 3	" " " ".....	3760	33	46	Rain and clear.
" 4	" " " ".....	3760	24	—	Clear to rain, sleet.
" 5	Near S. by, tp. 18, r. 16.....	3710	26	52	Cloudy.
" 6	" " " ".....	3710	44	64	Cloudy.
" 7	" " " ".....	3710	29	65	Cloudy to rain.
" 8	" " " ".....	3710	41	59	Rain.
" 9	" " " ".....	3710	36	55	Rain.
" 10	" " " ".....	3710	33	55	Showery.
" 11	" " " ".....	3710	34	64	Cloudy to clear.
" 12	" " " ".....	3710	17	66	Fine.
" 13	" " " ".....	3710	20	65	Fair.
" 14	" " " ".....	3710	38	58	Rain to cloudy.
" 15	" " " ".....	3710	34	68	Fair.
" 16	" " " ".....	3710	29	65	Fair.
" 17	" " " ".....	3710	40	61	Rain to clear.
" 18	} Three days move.....	—	—	—	Fine.
" 19					
" 20					
" 21	N. by, tp. 17, r. 14.....	2370	29	66	Fine.
" 22	" " " ".....	2370	42	58	Fine.
" 23	" " " ".....	2370	30	49	Rain.
" 24	" " " ".....	2370	36	46	Rain.
" 25	" " " ".....	2370	35	—	Rain to cloudy.
" 26	Sec. 27, tp. 16, r. 14.....	2335	20	54	Fine.
" 27	" " " ".....	2335	14	46	Fine.
" 28	" " " ".....	2335	19	—	Fine.
" 29	" " " ".....	—	—	—	Cloudy.
" 30	E. of reserve, tp. 19, r. 13.....	2900	21	51	Rain to cloudy.
" 31	" " " ".....	2900	19	48	Cloudy.
Nov. 1	E. of reserve, tp. 19, r. 13.....	2900	23	—	Snow and sleet.
" 2	" " " ".....	—	—	—	Rain to clear.
" 3	Near S. by, tp. 19, r. 14.....	—	30	46	Fair.
" 4	Moving camp en route to Tranquille.....	—	No	—	Fair.
" 5	" " " ".....	—	Tem-	—	Fair.
" 6	" " " ".....	—	pera-	—	Fair.
" 7	Forest reserve.....	—	tures	—	
" 8	" " " ".....	—	taken.	—	
" 9	Arrived at main camp of R. D. McCaw.....	—	—	—	

TABLE of Temperatures and Weather Conditions—Accompanying the Report of
R. D. McCaw, D.L.S., Season 1910.

Day.	Place.	Altitude	Temperature Degrees Fahrenheit.		Weather.
			Min.	Max.	
		Ft.	°	°	
May 17	First camp on Three Mile Creek	2190	44·5	73	Fair.
" 18	" " "	2190	44	64	Showery.
" 19	" " "	2190	29	76	Fair.
" 20	" " "	2190	44	70	Fair.
" 21	" " "	2190	40	84	Fine.
" 22	" " "	2190	44·5	—	Fine.
" 23	" " "	2190	46·5	83	Fine.
" 24	" " "	2190	47	67	Fair.
" 25	" " "	2190	30	67	Showery.
" 26	" " "	2190	30	63	Showery.
" 27	" " "	2190	37	62	Showery.
" 28	" " "	2190	32	54	Showery.
" 29	" " "	2190	32	—	Fine.
" 30	" " "	2190	40	69	Fair.
" 31	" " "	2190	39	89	Fine.
June 1	" " "	2190	42	56	Rain.
" 2	" " "	2190	40	50	Cloudy.
" 3	" " "	2190	—	—	Fine.
" 4	Tunkwa Lake	3835	28	64	Fine.
" 5	" " "	3835	30	52	Rain.
" 6	" " "	3835	44	48	Rain.
" 7	Guichon Creek, tp. 17, r. 21	3370	35	63	Fair.
" 8	" " "	3370	30	71	Fair.
" 9	" " "	3370	33	71	Fair.
" 10	" " "	3370	38	81	Fine.
" 11	" " "	3370	51	81	Rain.
" 12	" " "	3370	27·5	53	Fine.
" 13	" " "	3370	33	70	Fine.
" 14	Indian Res. 14, tp. 17, r. 22	3825	42	64·5	Fine.
" 15	" " "	3825	34	62	Fine.
" 16	" " "	3825	33	69	Fair.
" 17	Indian Res. 12, tp. 18, r. 23	3840	38	57	Cloudy.
" 18	" " "	3840	28	57	Cloudy.
" 19	" " "	3840	31	59	Rain and hail.
" 20	" " "	3840	27	55	Rain.
" 21	" " "	3840	29	56	Cloudy.
" 22	" " "	3840	31	—	Cloudy.
" 23	East by tp. 18, r. 24	3605	30	66	Fine.
" 24	" " "	3605	39	69	Fair.
" 25	" " "	3605	40	70	Fine.
" 26	" " "	3605	32	70	Fine.
" 27	" " "	3605	29	56	Cloudy.
" 28	" " "	3605	30	61	Cloudy.
" 29	" " "	3605	32	69	Fine.
" 30	" " "	3605	40	—	Cloudy.
July 1	Spence Bridge	730	52	84	Fine,
" 2	" " "	730	56	80	Showery.
" 3	" " "	730	52	76	Showery.
" 4	" " "	730	50	84	Fine.
" 5	" " "	730	57	84	Fine.
" 6	" " "	730	60	—	Fine.
" 7	8 miles up Nicola River	1020	64	80	Fine.
" 8	" " "	1020	60	94	Showery.
" 9	12 miles up Nicola River	1220	54	85	Fine.
" 10	" " "	1220	54	86	Fine.
" 11	" " "	1220	56	—	Fine.
" 12	Sec. 3, tp. 16, r. 22	3880	36	74	Fine.
" 13	" " "	3880	39	68	Fine.
" 14	" " "	3880	28	75	Fine.
" 15	Sec. 35, tp. 15, r. 23	2725	42	80	Fine.

TABLE of Temperatures and Weather Conditions—Accompanying the Report of
R. D. McCaw, D.L.S., Season 1910—*Continued.*

Day.	Place.	Altitude	Temperature Degrees Fahrenheit.		Weather.
			Min.	Max.	
		Ft.	°	°	
July 16	"	2725	43	80	Fine.
" 17	Sec. 6, tp. 16, r. 23	2465	44	78	Fine.
" 18	"	2465	46	79	Fine.
" 19	"	2465	40	84	Fine.
" 20	Pimainus Creek	4700	46	78	Fine.
" 21	"	4700	35	70	Showery.
" 22	21 miles up Nicola River	1475	—	—	Showery.
" 23	"	1475	42	72	Fine.
" 24	"	1475	—	—	Rain.
" 25	"	1475	42	79	Fine.
" 26	"	1475	45	74	Fair.
" 27	Near Canford	1650	41	85	Fine.
" 28	"	1650	47	93	Fine.
" 29	"	1650	46	94	Fine.
" 30	"	1650	46	85	Fine.
" 31	"	1650	44	83	Fine.
Aug. 1	Moving up Guichon Creek to Long Lake Reserve	—	43	—	Showery.
" 2	"	—	—	—	Cloudy.
" 3	"	—	31	78	Fine.
" 4	Meadow Creek, tp. 17, r. 20	3940	43	68	Rain.
" 5	"	3940	47	66	Showery.
" 6	"	3940	43	73	Thunderstorms.
" 7	"	3940	32	73	Showery.
" 8	"	3940	34	78	Thunderstorms.
" 9	"	3940	32	78	Cloudy.
" 10	"	3940	33	74	Fine.
" 11	"	3940	32	72	Fine.
" 12	E. by. tp. 17., r. 20	4110	30	62	Fine.
" 13	"	4110	28	61	Rain.
" 14	"	4110	42	46	Rain.
" 15	"	4110	39	55	Showery.
" 16	"	4110	25	63	Showery.
" 17	Near Trout Lake	4210	26	74	Cloudy.
" 18	"	4210	27	78	Fine.
" 19	"	4210	26	81	Fine.
" 20	"	4210	29	77	Fine.
" 21	"	4210	32	64	Cloudy.
" 22	"	4210	29	65	Cloudy.
" 23	"	4210	30	50	Showery, some snow
" 24	"	4210	15	72	Fine.
" 25	"	4210	11	58	Fine.
" 26	"	4210	16	61	Cloudy.
" 27	Sec. 35, tp. 18, r. 18	3485	32	62	Cloudy.
" 28	"	3485	33	54	Rain.
" 29	"	3485	32	59	Cloudy.
" 30	"	3485	32	58	Rain.
" 31	"	3485	39	62	Showery.
Sept. 1	Sec. 33, tp. 18, r. 18	3485	43	69	Showery.
" 2	Moving the camp to the Niskonlith Reserve	—	34	—	Fair.
" 3	"	—	—	—	Rain.
" 4	"	—	—	—	Fine.
" 5	N. E. pt. tp. 20, r. 15	3125	—	—	Rain.
" 6	"	3125	30	62	Rain.
" 7	"	3125	28	60	Fine.
" 8	"	3125	24	56	Cloudy.
" 9	"	3125	25	60	Cloudy.
" 10	"	3125	27	57	Rain.
" 11	"	3125	—	—	Cloudy.
" 12	"	3125	22	64	Fine.
" 13	"	3125	24	70	Fine.
" 14	"	3125	26	72	Fine.
" 15	"	3125	27	76	Fine.
" 16	"	3125	27	75	Fine.
" 17	"	3125	32	72	Fine.

TABLE of Temperatures and Weather Conditions—Accompanying the Report of
R. D. McCaw, D.L.S., Season 1910—*Continued.*

Day.	Place.	Altitude	Temperature Degrees Fahrenheit		Weather.
			Min.	Max.	
		Ft.	°	°	
Sept. 18	" "	3125	28	72	Fine.
" 19	" "	3125	31	78	Fine.
" 20	" "	3125	35	79	Fine.
" 21	" "	3125	32	78	Fine.
" 22	" "	3125	30	62	Fine.
" 23	Near Louis Lake.....	2770	44	54	Cloudy.
" 24	" "	2770	36	51	Fine.
" 25	" "	2770	28	51	Cloudy.
" 26	" "	2770	38	—	Cloudy.
" 27	Sec. 36, tp. 21, r. 15.....	2635	—	—	Cloudy.
" 28	" "	2635	41	59	Rain, Cloudy.
" 29	" "	2635	39	61	Cloudy.
" 30	" "	2635	31	45	Rain, Snow.
Oct. 1	" "	2635	41	53	Rain.
" 2	" "	2635	30	50	Rain.
" 3	" "	2635	31	40	Rain, Snow.
" 4	" "	2635	26	44	Rain.
" 5	" "	2635	30	46	Rain.
" 6	" "	2635	40	58	Cloudy.
" 7	Hefferly Lake.....	3105	28	58	Cloudy.
" 8	" "	3105	43	54	Rain.
" 9	Sec. 10, tp. 22, r. 16.....	2550	41	51	Rain.
" 10	" "	2550	39	44	Rain.
" 11	Moving camp to the Tranquille Reserve.....	2550	34	—	Cloudy.
" 12	" " " " " "	—	—	—	Fine.
" 13	Sec. 34, tp. 21, r. 18.....	3215	27	53	Cloudy.
" 14	" "	3215	39	52	Cloudy.
" 15	" "	3215	37	58	Cloudy.
" 16	" "	3215	36	58	Fair.
" 17	" "	3215	37	52	Showery.
" 18	" "	3215	32	47	Fine.
" 19	" "	3215	29	53	Fine.
" 20	" "	3215	34	53	Fine.
" 21	" "	3215	30	56	Fine.
" 22	" "	3215	27	56	Fine.
" 23	" "	3215	24	38	Rain, Snow.
" 24	" "	3215	28	45	Rain.
" 25	" "	3215	27	40	Fine.
" 26	" "	3215	17	35	Fine.
" 27	" "	3215	18	38	Fine.
" 28	" "	3215	22	46	Cloudy.
" 29	" "	3215	28	46	Cloudy.
" 30	Watching Creek at south limit of Tranquille Reserve.....	2770	24	45	Snow.
" 31	" " " " " "	2770	17	39	Cloudy.
Nov. 1	" " " " " "	2770	22	42	Snow.
" 2	" " " " " "	2770	27	49	Cloudy.
" 3	" " " " " "	2770	27	41	Snow.
" 4	" " " " " "	2770	22	39	Cloudy.
" 5	" " " " " "	2770	29	45	Cloudy.
" 6	" " " " " "	2770	28	51	Fine.
" 7	" " " " " "	2770	31	49	Fine.
" 8	" " " " " "	2770	20	39	Snow.
" 9	" " " " " "	2770	15	33	Snow.
" 10	" " " " " "	2770	29	39	Cloudy.
" 11	" " " " " "	2770	21	41	Cloudy.
" 12	" " " " " "	2770	22	39	Fine.
" 13	" " " " " "	2770	20	37	Cloudy.
" 14	" " " " " "	2770	19	48	Some snow.
" 15	" " " " " "	2770	28	34	Heavy mists.
" 16	" " " " " "	2770	28	31	Cloudy.
" 17	" " " " " "	2770	29	35	Mists.
" 18	" " " " " "	2770	29	35	Snow.
" 19	" " " " " "	2770	16	34	Snow.

TABLE of Temperatures and Weather Conditions—Accompanying the Report of
A. V. Chase, D.L.S., Season 1911.

Day.	Place.	Altitude	Temperature Degrees Fahrenheit		Weather.
			Min.	Max.	
		Ft.	°	°	
June 22	Watching Ck., 36, 21, 19.....	2890	41	69	Rain to fine.
" 23	" " "	2890	31	76	Fine.
" 24	" " "	2890	43	80	Fine.
" 25	" " "	2890	31	82	Fine.
" 26	" " "	2890	52	68	Rain.
" 27	" " "	2890	43	72	Cloudy.
" 28	" " "	2890	42	64	Showers.
" 29	" " "	2890	34	66	Cloudy to showers.
" 30	Moving Camp.....	2890	30	—	Cloudy with showers.
July 1	Sec. 1, tp. 22, r. 20.....	2760	30	78	Cloudy to fine.
" 2	" " "	2760	35	75	Fine.
" 3	" " "	2760	29	77	Fine.
" 4	" " "	2760	36	75	Fine.
" 5	Moving camp.....	2760	25½	80	Fine to cloudy.
" 6	Point near N. by. of tp. 22, 20 on Tranquille Riv	3260	49	68	Fine to cloudy.
" 7	" " " " "	3260	39	53	Rain.
" 8	" " " " "	3260	40	59	Showers.
" 9	" " " " "	3260	43	59	Rain.
" 10	" " " " "	3260	43	58	Showers.
" 11	Moving camp.....	3260	28½	75	Fine.
" 12	Criss Ck., S. bdy., tp. 23, 21.....	2415	33½	78	Fine.
" 13	" " "	2415	37	86	Fine.
" 14	" " "	2415	39	90	Fine.
" 15	Moving camp.....	2415	45	85	Fine.
" 16	Criss Ck., Sec. 27, 23, 21.....	2890	44	84½	Fine.
" 17	" " "	2890	39	76	Fine.
" 18	" " "	2890	36	79½	Fine.
" 19	" " "	2890	44	77	Showers to fine.
" 20	Moving camp.....	2890	36	85	Fine.
" 21	Deadman river, in Sec. 25, 23, 22.....	2140	46	77	Fine.
" 22	" " "	2140	48	77	Fine to cloudy.
" 23	" " "	2140	48	84	Fine.
" 24	" " "	2140	48	90	Fine.
" 25	" " "	2140	54	88	Thunderstorms.
" 26	" " "	2140	42	80	Fine to cloudy.
" 27	Pass Valley W. End Ind. Res.....	2500	40	76	Fine.
" 28	" " "	2500	43	80	Fine.
" 29	" " "	2500	52	80	Cloudy to fine.
" 30	Cache Ck., Sec. 2, 22, 24.....	2710	41	76	Fine.
" 31	" " "	2710	51	62	Fine.
Aug. 1	" " "	2710	48	78	Fine.
" 2	" " "	2710	44	74	Fine.
" 3	" " "	2710	42	76	Fine to cloudy.
" 4	" " "	2710	43	—	Cloudy.
" 5	Lot 435, Semlin Valley.....	1700	52	68	Cloudy.
" 6	" " "	1700	54	60	Cloudy to rain.
" 7	" " "	1700	51	62	Showers.
" 8	" " "	1700	48	—	Cloudy to fine.
" 9	Hat Ck., Sec. 24, 22, 26.....	2000	36	76	Fine.
" 10	" " "	2000	42	74	Fine to showers.
" 11	" " "	2000	41	78	Light showers.
" 12	" " "	2000	46	76	Fine to cloudy.
" 13	" " "	2000	48	69	Fine to cloudy.
" 14	" " "	2000	46	68	Cloudy.
" 15	" " "	2000	41	76	Fine.
" 16	" " "	2000	48	77	Cloudy with a little rain.
" 17	" " "	2000	33	83	Fine.
" 18	" " "	2000	44	—	Fine.
" 19	Scottie Ck., near sec, 22, 23, 25.....	2450	43	66	Rain.
" 20	" " "	2450	44	70	Rain.

TABLE of Weather Conditions—Accompanying Report of A. V. Chase, D.L.S.,
Season 1911—*Continued.*

Date.	Place.	Altitude	Temperature Degrees Fahrenheit		Weather.
			Min.	Max.	
		Ft.	°	°	
Aug. 21	Scottie Ck., near sec. 22, 23, 25	2450	40	77	Cloudy to fine.
" 22	" "	2450	39	74	Fine.
" 23	" "	2450	32	78	Fine.
" 24	" "	2450	34½	78	Fine.
" 25	" "	2450	34	78	Fine.
" 26	" "	2450	29	80	Fine.
" 27	" "	2450	32	82	Fine.
" 28	" "	2450	44	78	Fine and cloudy.
" 29	" "	2450	52	66	Rain.
" 30	" "	2450	40	78	Fine.
" 31	" "	2450	45	—	Rain to clear.
Sept. 1	Sec. 19, 23, 27	3350	34	64	Fine.
" 2	"	3350	38	70	Fine.
" 3	"	3350	44½	63	Rain.
" 4	"	3350	47	55	Rain.
" 5	"	3350	39	57	Fine to cloudy.
" 6	"	3350	42	58	Cloudy.
" 7	"	3350	42	54	Rain.
" 8	Moving camp up Hat creek	3350	40	—	Fine.
" 9	"	—	—	—	Fine.
" 10	Sec. 13, 21, 27	2810	31	71	Fine.
" 11	"	2810	32	72	Fine.
" 12	"	2810	32	58	Thunderstorm.
" 13	"	2810	44	62	Rain.
" 14	"	2810	40	60	Fine to showery.
" 15	"	2810	30	54	Cloudy to fine.
" 16	"	2810	31	55	Fine to rain.
" 17	Hat Creek, Sec. 13, 21, 27	2810	29½	56	Cloudy to fine.
" 18	"	2810	25	60	Cloudy to fine.
" 19	"	2810	37	—	Cloudy.
" 20	Point near McLean Lake, tp. 21, 25	3590	32	52	Cloudy to showers.
" 21	"	3590	26	52	Cloudy to snow.
" 22	"	3590	27	39	Cloudy.
" 23	Close of examination of lands	3590	20	60	Cloudy.
1912.					
May 30	S.W. corner Ashcroft I. R. No. 3, tp 21, r. 25.	3530	33	68	Fine.
" 31	" "	3530	31	68	Cloudy and fine.
June 1	" "	3530	36	78	Cloudy to fine.
" 2	" "	3530	34	62	Cloudy.
" 3	" "	3530	30	68	Fine.
" 4	" "	3530	32	68	Fine.
" 5	" "	3530	37	74	Fine.
" 6	" "	3530	34	78	Fine.
" 7	Near N.E. 3, 21, 26	3740	29	90	Fine.
" 8	"	3740	31	94	Fine.
" 9	"	3740	30	74	Fine.
" 10	"	3740	30	74	Fine to cloudy.
" 11	Near 25, 20, 27	3310	47	78	Cloudy.
" 12	"	3310	48	68	Light showers.
" 13	"	3310	36	71	Cloudy to fine.
" 14	"	3310	44	61	Heavy rain.
" 15	"	3310	46	64	Fine to cloudy.
" 16	"	3310	40	82	Fine.
" 17	"	3310	47	87	Fine.
" 18	"	3310	47	80	Fine.
" 19	Sec. 20, 19, 26	3780	48	82	Fine to thunderstorms.
" 20	"	3780	54	72	Fine to thunderstorms.
" 21	"	3780	54	69	Fine.
" 22	"	3780	48	74	Fine.
" 23	"	3780	50	80	Fine.
" 24	"	3780	48	82	Fine.
" 25	"	3780	50	—	Fine.
" 26	Near 22, 19, 25	2320	62	94	Showers.
" 27	"	2320	54	59	Cloudy to showers.

SCHEDULE of Temperatures and Weather Conditions—Accompanying Report of
A. V. Chase, D.L.S., Season 1912—*Continued.*

Date.	Place.	Altitude	Temperature Degrees Fahrenheit.		Weather.
			Min.	Max.	
		Ft.	°	°	
June 28	Near 22, 19, 25	2320	47	68	Cloudy.
" 29	" "	2320	51	68	Fair.
" 30	" "	2320	48	60	Rain.
July 1	" "	2320	50	82	Overcast.
" 2	" 14, 18, 25	2070	54	86	Rain to fair.
" 3	" "	2070	47	86	Overcast.
" 4	" "	2070	52	83	Overcast.
" 5	" "	2070	51	66	Rain.
" 6	" "	2070	46	76	Fair to cloudy.
" 7	" 17, 18, 25	2940	48	62	Rain.
" 8	" "	2940	44	68	Showers.
" 9	" "	2940	45	71	Fine to cloudy.
" 10	" "	2940	48	76	Overcast to rain.
" 11	In sec. 11, 17, 25	770	57	91	Fine.
" 12	" "	770	59	77	Cloudy.
" 13	" "	770	61	75	Cloudy to fine.
" 14	" "	770	59	91	Fine.
" 15	" "	770	60	88	Fine.
" 16	" "	770	68	86	Fine.
" 17	" "	770	54	—	Fine.
" 18	" "	—	—	—	Fine.
" 19	Near 30, 16, 26	3510	46	78	Cloudy to fine.
" 20	" "	3510	46	74	Fine to very cloudy.
" 21	" "	3510	48	68	Overcast.
" 22	" "	3510	50	62	Overcast.
" 23	" "	3510	44	73	Misty to fine.
" 24	In lot 45, tp. 15, r. 26	1625	54	73	Showers.
" 25	" "	1625	50	71	Fair.
" 26	" "	1625	46	76	Fair.
" 27	" "	1625	45	—	Fine.
" 28	Spintlum Flat I. R. in tp. 16, r. 27	810	56	90	Fine.
" 29	" "	810	57	96	Fine.
" 30	" "	810	58	98	Fine.
" 31	" "	810	60	80	Fair to cloudy.
Aug. 1	In sec. 29, 17, 27	1470	61	78	Rain to cloudy.
" 2	" "	1470	57	82	Fine.
" 3	" "	1470	57	82	Fair.
" 4	" "	1470	55	81	Fine.
" 5	" "	1470	52	83	Fine.
" 6	" "	1470	55	76	Overcast.
" 7	" "	1470	56	93	Fine.
" 8	" "	1470	62	84	Rain.
" 9	" "	1470	56	76	Rain to overcast.
" 10	" "	1470	56	74	Cloudy and showers.
" 11	" "	1470	52	70	Cloudy.
" 12	" "	1470	50	—	Fine.
" 13	In S.E. of 7, 17, 27	1100	48	92	Fine.
" 14	" "	1100	60	94	Fine.
" 15	" "	1100	54	64	Heavy rain.
" 16	" "	1100	51	81	Rain to cloudy.
" 17	" "	1100	50	72	Cloudy.
" 18	" "	1100	54	83	Fine.
" 19	" "	1100	57	80	Fine.
" 20	" "	1100	54	84	Fine to overcast.
" 21	" "	1100	57	85	Fine.
" 22	In 22, 15, 27	560	58	96	Fine.
" 23	" "	560	60	92	Fine to cloudy.
" 24	" "	560	64	78	Fine.
" 25	" "	560	52	82	Fine to overcast.
" 26	" "	560	50	80	Fine to cloudy.
" 27	" "	560	56	70	Cloudy.
" 28	" "	560	51	—	Fair to rain.
" 29	In S.E. 7, 17, 27	1100	42	68	Fine to cloudy.
" 30	" "	1100	51	66	Fine to cloudy.
" 31	" "	1100	51	—	Cloudy to rain.
Sept. 1	N. W. part tp. 17, r. 28	6800	28	46	Snow.

SCHEDULE of Temperatures and Weather Conditions—Accompanying Report of
A. V. Chase, D.L.S., Season 1912—*Continued.*

Day.	Place.	Altitude	Temperature Degrees Fahrenheit		Weather.
			Min.	Max.	
		Ft.	°	°	
Sept. 2	N.W. pt. tp. 17, r. 28.	6800	32	40	Snow and rain.
" 3	" "	6800	28	45	Snow.
" 4	" "	6800	24	55	Snow and rain.
" 5	" "	6800	23	—	Fair.
" 6	" "	—	—	—	Showers.
" 7	" "	—	—	—	Fair.
" 8	In sec. 7, 15, 26	770	45	73	Fair.
" 9	" "	770	47	84	Fine.
" 10	" "	770	46	78	Fine.
" 11	" "	770	48	82	Fine.
" 12	" "	770	49	—	Fine.
" 13	In sec. 16, 15, 25	1190	48	77	Fine.
" 14	" "	1190	46	74	Fine.
" 15	" "	1190	41	80	Fine.
" 16	" "	1190	40	71	Fine.
" 17	" "	1190	48	72	Fine.
" 18	" "	1190	48	70	Thundershower.
" 19	" "	1190	45	—	Fine.
" 20	In sec. 3, 16, 24	1950	35	66	Fair.
" 21	" "	1950	37	66	Fine.
" 22	" "	1950	45	68	Cloudy to fine.
" 23	" "	1950	45	54	Fair.
" 24	" "	1950	40	—	Fine.
" 25	In sec. 4, 15, 23	1500	42	55	Fine.
" 26	" "	1500	40	70	Fine.
" 27	" "	1500	46	78	Fine.
" 28	" "	1500	35	—	Fine.
" 29	In sec. 35, 13, 23	1890	35	72	Fine to cloudy.
" 30	" "	1890	40	68	Fine.
Oct. 1	" "	1890	42	64	Fine.
" 2	" "	1890	42	66	Fine.
" 3	" "	1890	54	62	Heavy rain.
" 4	" "	1890	34	56	Cloudy to fair.
" 5	" "	1890	28	64	Fine.
" 6	" "	1890	33	58	Fine.
" 7	" "	1890	34	—	Cloudy to showers.
" 8	In sec. 28, 12, 23	3480	35	53	Cloudy to fair.
" 9	" "	3480	32	58	Fair.
" 10	" "	3480	39	56	Fine.
" 11	" "	3480	33	62	Fine.
" 12	" "	3480	28	62	Fine.
" 13	" "	3480	28	60	Fine.
" 14	" "	3480	30	64	Fine.
" 15	" "	3480	33	—	Cloudy to showers.
" 16	In sec. 34, 11, 23	2690	44	54	Rain.
" 17	" "	2690	35	54	Rain and snow.
" 18	" "	2690	30	60	Cloudy to heavy snow.
" 19	" "	2690	29	42	Fair.
" 20	" "	2690	18	32	Fair to snow.
" 21	" "	2690	17	34	Fair to snow.
" 22	" "	2690	25	35	Cloudy.
" 23	" "	2690	25	—	Fine.
" 24	" "	2690	—	—	Cloudy.
" 25	In the Coldwater valley, E. of sec. 1, 10, 23.	3050	30	41	Cloudy to showers.
" 26	" "	3050	23	40	Fair.
" 27	" "	3050	20	42	Fine.
" 28	" "	3050	12	—	Fair.
" 29	In sec. 24, 9, 23	3260	20	34	Snow.
" 30	" "	3260	25	34	Fair.
" 31	" "	3260	17	30	Fine.
Nov. 1	In sec. 24, 9, 23	3280	17	31	Cloudy.
" 2	" "	3280	26	31	Cloudy to snow and rain.
" 3	" "	3280	26	31	Cloudy to snow.
" 4	" "	3280	—	—	Cloudy.
" 5	" "	3280	—	—	Fair.

SCHEDULE of Temperatures and Weather Conditions—Accompanying Report of
A. V. Chase, D.L.S., Season 1912—*Continued.*

Date.	Place.	Altitude	Temperature Degrees Fahrenheit.		Weather.
			Min.	Max.	
		Ft.	°	°	
Nov. 6	In sec. 24, 9, 23	3280	—	—	
" 7	"	3280	—	—	
" 8	"	3280	—	—	
" 9	In sec. 36, 13, 27	660	35	54	Cloudy.
" 10	"	660	35	56	Showers.
" 11	"	660	35	42	Rain.
" 12	"	660	37	—	Heavy rain.
" 13	In S.W. $\frac{1}{4}$ 29, 16, 26	700	36	60	Rain.
" 14	"	700	31	42	Fine.
" 15	"	700	28	41	Fine.
" 16	"	700	29	51	Showery.
" 17	"	700	31	46	Rain.
" 18	"	700	36	46	Heavy rain.
" 19	"	700	38	52	Fair.
" 20	"	700	34	52	Rain.
" 21	"	700	35	50	Cloudy.

